

VIDEO TOASTER USER

YOUR GUIDE TO VIDEO FX/LIGHTWAVE 3D®/TV GRAPHICS™

FEBRUARY 1996

1995 VTU EXPO

SPEED & STORAGE:

A Guide to
CD-ROM Drives

The UNKNOWN Story of the TOASTER

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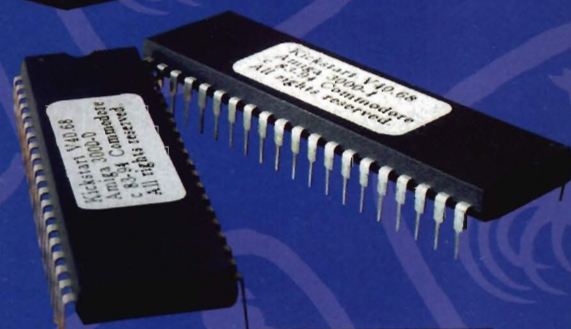
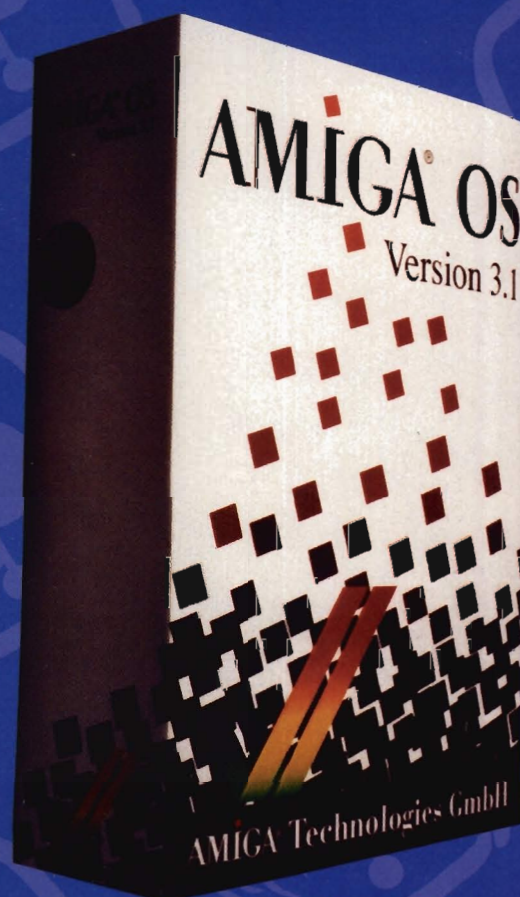
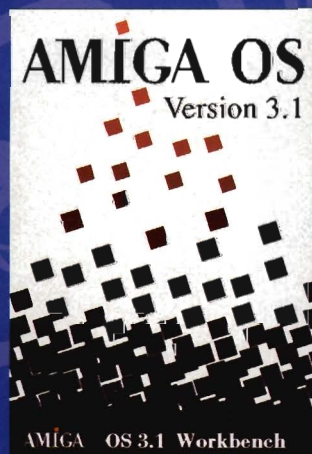
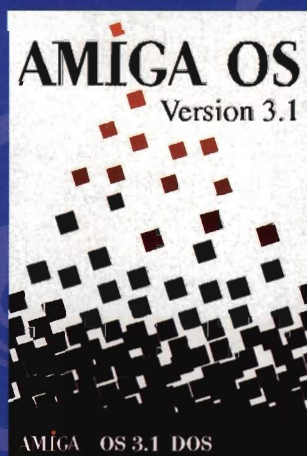
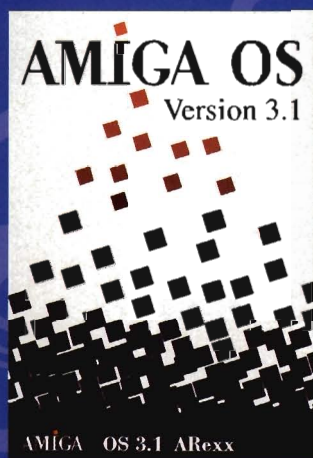
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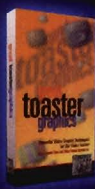
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FEBRUARY 1996 VOLUME 6 NUMBER 2

FEATURES

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by T. P. McAuliffe

Eager attendees, active exhibitors, valuable training courses—this year's Expo really delivered the goods! Relive the four days of Toaster mania with a recap from our exhausted editor in chief, complete with excerpts from Petro Tyschtschenko's and Tim Jenison's keynote speeches.



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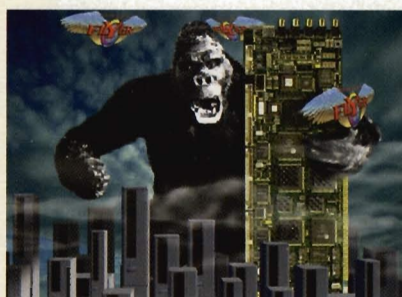
by Chris Fenwick

Sure, you're the hottest Toaster master in the area, but do you have the business smarts to stay on top? Our beginner's look at budgeting will tell you whether you're doing the math right.

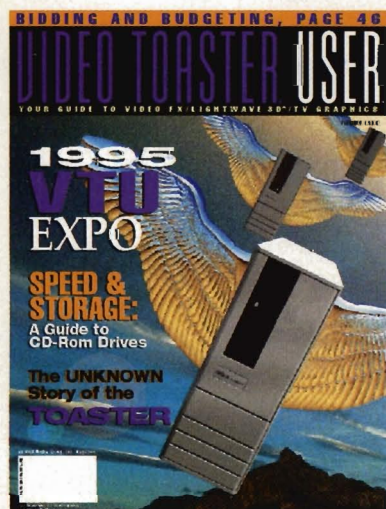
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by Harold Russell

In an exclusive interview and firsthand account, Atomic Toaster founder Harold Russell explores the unknown story of the Toaster and Flyer.



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Cover design by Michael Allen, FryeAllen, Inc.
LightWave model by Bruce Bramit, FryeAllen, Inc.
Computer imaging by Brian Cowen, FryeAllen, Inc.

VIDEO TOASTER USER Vol. 6, No. 2 (ISSN 1075-8704) is published monthly by Avid Media Group, Inc., 1308 Orleans Dr., Sunnyvale, CA 94089. A one-year subscription (12 issues) in the U.S. and its possessions is \$36; Canada/Mexico, \$48 (U.S.); Foreign, \$76 (U.S.). Allow 4 to 6 weeks for first issue to arrive. Second-class postage rates paid at Sunnyvale, CA, and additional mailing offices.
POSTMASTER: Send address changes to **VIDEO TOASTER USER**, P.O. Box 16346, North Hollywood, CA 91615.
For quality reprints in quantities of 100 or more, contact **REPRINT SERVICES/VIDEO TOASTER USER**, 315 5th Avenue N.W., St. Paul, MN 55112, (612) 582-3800, Fax (612) 633-1862.

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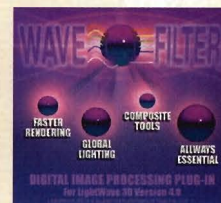
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by Erik Flom

For its size, this collection of LightWave image filters packs one hell of a wallop.



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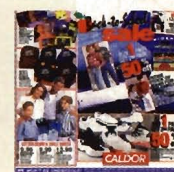


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by Michael McBride

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by Stan Shumlick

Gain ultimate control over your animation with this recent upgrade.



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YOUR GUIDE TO VIDEO FX/LIGHTWAVE 3D/TV GRAPHICS

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Write to Video Toaster User, Attn: Back Issues, \$5/issue (\$15 overseas). Prepayment in U.S. funds necessary. Make checks and money orders payable to Video Toaster User.

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QUESTIONS AND TIPS Direct your Toaster-specific questions or tips to VTU Questions, John Gross.

NEW PRODUCTS & UPDATES Direct your press releases and new product literature to New Products Editor.

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REPRINTS Contact Reprint Services, Video Toaster User, 315 Fifth Avenue NW, St. Paul, MN 55112; 612-582-3800; fax 612-633-1862.



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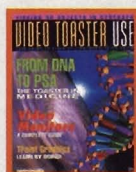
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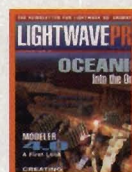
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If you're serious into Lightwave, then you've already seen or heard of Lightspeed; The Video magazine for the Lightwave Enthusiast. If by some chance you haven't heard of Lightspeed, here's a brief description of this great product: Lightspeed is a monthly video series (VHS), or video magazine which is 100% dedicated to Lightwave users. Each month, a new issue of Lightspeed is shipped out to subscribers containing 60-120 minutes of tutorials, reviews, animations, interviews and more. If you are not currently a subscriber, then you're missing out on some fantastic videos sent out every month. We are currently shipping the January Issue (96), but you can still order the first five videos for only \$19.95 each by calling our order line above. Here are some of the topics covered in previous issues:

► **#1 (August) • Cloaking Effects** - "Techniques on how to get that rippling cloaking effect as seen on shows such as Star Trek and Babylon 5" • **Talking Bones** - "A beginners look at making lips talk using bones" • **Projecting Reality** - "Compositing CG over a background image, but get the effect that the BG image is 3D and interactive" • **Camera Dolly** - "An in depth tutorial that shows you how to achieve camera dolly effects in Lightwave" • **REVIEW; Impact** - "A review on Dynamic Realities beta version software of Impact! for the Amiga"

► **#2 (September) • Making Bouncing Logos** - "This technique was used on a TV commercial to make squishy bouncing logos" • **Patching Splines** - "Create a book flipping through its pages using Splines" • **Realistic Lighting** - "Learn the key elements of real life lighting and how they can be applied in Lightwave" • **Tunneling in Lightwave** - "Create caves, tunnels and caverns in your objects and a perfect fly through on the 1st try" • **Treading Water** - "Follow along on a pool building tutorial that shows you how changing one element can effect the look of your water" • **Review: Winimages FX** - "A review on Black Belt Systems' powerful image processing program for the PC"

► **#3 (October) • Alphabet Ship** - "Use the fonts that come with Lightwave as a starting point to build complex looking ships and other objects" • **Motion Control** - "Part two of Camera Dolly, this segment takes you into the various techniques used to get camera movements to do what you want them to do, easily." • **It's Only 3D** - "A beginners look at modeler" • **Review: World Construction Set** - "Take a look at the amiga version of this powerful terrain creation program"

► **#4 (November) • Grassy Landscapes** - "You've all seen or read about how to create waving fields of grass or wheat on a flat surface, but what if you have hills and valleys? This tutorial will show you how to make the grass conform to the landscape" • **Creating Fire** - "Create Lightwave fire or learn how to use real flame sequences in your animation's" • **Review: MacroForm** - "A review of some new modeling tools available on the amiga and soon to be released for the PC"

► **#5 (December) • Shadow Ships** - "If you've seen the Babylon 5 objects on the Lightrom CD's, then you know the detail Dean Scott puts into his recreations, Now follow along as he builds his version of the shadow ship" • **Electrical Effects** - "Learn techniques needed to create various electrical effects in Lightwave" • **Review: Image CD's** - "A review on two popular moving texture CD's"

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TOASTER TALK

The Best Tool for the Job

Working in the Digital Minefield

by Tom Patrick McAuliffe



It's no secret there have been forces who have spread rumor and innuendo, both good and bad, about the Toaster and its manufacturer since day one. It's also no secret that I believe Tim Jenison just might be the Video Thomas Edison of the 90s and that the Toaster really is *the* best tool for the money and job—no apologies. Only the Toaster gives people a TV studio at this price *right now*. So if you're looking for moi on the "irrationally bash NewTek" mini-bandwagon, I won't be there. Not because of any rah-rah attitude, but because I believe that only with calm, complete and regular feedback will we affect change and make the product even better.

It's true, there *were* some problems in the past as NewTek reorganized, grew and effectively dealt with the loss of its host computer (something that would spell death for most companies). But it's also true that while there's always room for improvement, most of the problems have been addressed and corrected. The Video Toaster Flyer non-linear editor, for example, is basically a completely new product from the "under construction" 3.09 version a year ago. (We'll have a full review of 4.1 in the near future.) The Flyer's VTASC HQ-5 quality and the Amiga/Toaster combination whips other computer video schemes any day of the week.

With 4.1, the Flyer now offers network-caliber digital editing at a fraction of the cost of other systems—professional quality with an interface that even my 5-year-old nephew can master!

NewTek, unlike other manufacturers, *is* listening to users, as witnessed by recent decisions vis-à-vis upgrade programs, NSG, newly added Flyer editing features and total outreach to the development community. In my humble opinion, however, no other company in this industry goes through the scrutiny and receives the "feedback"—sometimes just plain static—that NewTek does. Most of this communication is via the Net. Well, as important and vital as I believe the Internet and WWW are, they are not *yet* truly representative of the average user, passionate as its citizens and their e-mail may be. With a million new users coming on-line each month, this may soon change. The impact of on-line services and communication cannot be ignored. As more VTU readers discover cyberspace (and—shameless plug—hopefully visit our web page), it needs to be understood that *some* of the people on-line obviously have too much time on their hands. I hope those that decide not to ride the digital highway will still consider letting their voices be heard. (Some say the best interface every designed is a paper and pencil.) Constructive criticism is valuable and should be encouraged. But imagine what could be accomplished if the constant nay-sayers on the Net spent

half their time actually *working* on video projects instead of dealing in rumor and counterproductive negativity? Got nothing to do? Go produce a free public service announcement for a local charity! As *Tonight Show* Toaster Effects Engineer Mac McAlpin is fond of saying, "It's a poor workman who blames his tools—make the best use of what you have!"

Broadcast Quality vs. Broadcast Standards

While I was in Hollywood at the expo, McAlpin honored me with a private tour of the NBC facilities and the amazing *Tonight Show* set. (It looks really small from behind Jay Leno's desk!) Amid all those multi-million dollar machines in NBC's network control room sit two Toaster towers! The show uses the Toaster for everything from titles and graphics to animation and special effects. (See "Toasterizing the Late-Night Competition," Nov. 1994 VTU.) Yet there are those out there who still doubt that the Toaster's output is of "broadcast quality," a term that's essentially meaningless. Much more important is the fact that the signal produced by the Video Toaster and Toaster Flyer meets or exceeds the FCC's NTSC, RS-170A broadcast standards. Many products plainly don't have what it takes to deliver this crucial broadcast spec. "You can't get much more quality than using it on one of the most popular TV shows today!" said McAlpin. "We use the Toaster daily as a paint box, CG and DVE. By using a sync-generator, we easily integrate the Toaster signal into our high-end environment with no problem."

Remember when Commodore went under and all the "chicken littles" came out with their doom and gloom? My thought was: "So what? Your Toaster hasn't stopped being a productive tool!" Now that the Amiga is back and the Toaster is better than ever, what's your excuse for not achieving your video and animation goals? The point is to get busy today, because tomorrow never comes and there'll always be excuses. As Andrew Timmons, president of the Silicon Valley Toaster Users Group, says: "Quit Bragging! Stop Whining! Get Toasting!" Or as they say in the Middle East, The dogs may bark, but the caravan moves on! Let's get to work and use the power of video to better our world.

To that end, this month in VTU you'll find a new column called "Dr. Toaster," which will tackle your tough Toaster questions as "Dear John" morphs into a LightWave-only Q&A. We also let you share in the excitement that is the VTU Expo, help you budget your business and show you how to choose a CD-ROM system. Thanks for listening and see you next time!

Reach me on-line at 102170.1372@compuserve.com

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TOASTER TIMES

THEY JUST KEEP GETTING YOUNGER

by Julie Sheikman

WANTED: Experienced LightWave animator/Toaster video production person. Must have at least four years of experience with LightWave and the Toaster. Must be 14 years of age, self-motivated and enthusiastic.

Know anyone who might fit the bill? Maybe—but are they 14 years old? Probably not—unless you know Gabriel Dunne, that is. This 14-year-old from Fairfax, Calif., is definitely not your average teenager. He's been working with the Toaster and LightWave for four years now, which—if you've done your math—makes him 10 years old when he started. Gabriel's dad, Michael, owns Arch-angeles Audio Visual Productions in nearby San Anselmo, where Gabriel got his hands-on experience.

Like many artists, Gabriel was initially self-taught: "I didn't really know how to use it [the Video Toaster]—I was just playing around with it. Then my dad got this new system a couple of years ago, so he had two Toasters. He let me use one while he did all his work on the other one."

The same is true for LightWave 3D, which



Gabriel and his friend Shantyroo take a break from the studio.

Gabriel is especially fond of: "I didn't know how to use Modeler at all. It was like another planet. I just loaded all of the objects that came with the Toaster and moved them around with motion paths, just playing with them. But now, I've totally mastered Modeler. I'm using that a lot." And

now he reads the manual, of course.

All that "playing around" has really paid off. Gabriel helps his dad with his business, creating flying logos and other objects. He likes the experience each new project provides: "I usually try to make each logo or

continued on page 14

TECH TIP OF THE MONTH

Before You Autohue, Delete HS: We have to admit it—we're not sure why this one works, since theoretically, it should make no difference. But, as with many things, practice beats theory. Repeated runs of the Autohue utility often fail to properly calibrate a Video Toaster. If you have 3.5 or earlier Toaster software, locate the files HS and HS.default in the Toaster drawer. Delete the HS file, leaving HS.default alone. (Second tip, no extra charge: Leave *anything* in Toaster software directories that ends in ".default" alone!)

For the Flyer, these files are located in NewTek/Programs/Switcher_Support. Run Autohue again. This time, the calibration will work, given a healthy Toaster and host system.

Complete documentation on Autohue can be found on NewTek's on-line services, or you may call NewTek Technical Support for a faxed copy.

NewTek Technical Support:
(913) 228-8282

24-hour fax: (913) 228-8222

NewTek BBS: (913) 271-9299

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—Chuck Baker,
NewTek Technical Support

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News & Notes

It's a Global Thing

Join your Toaster-mates from all over the world by taking part in the International Amiga Society (IAS). The IAS is an international association of Amiga owners, users, developers, dealers and believers. The association's

goal is to protect the investment in money, time and skills and to use available technologies in forging an effective form of communication for its members. IAS is currently creating a database of all existing user groups. If your group would like to participate, send your snail mail

address, e-mail or BBS address/contact, and number of members to IAS-Register@art-works.apana.org.au.

Also, you can visit the IAS home page at <http://falcon.cc.ukans.edu/~dangermo/IAUG/index.html>. If you have questions regarding IAS or its database, address them to IAS-Queries@art-works.apana.org.au.

More International News

Looking for a new place to visit this spring? How about Riccione, Italy? Bit.Movie '96, an international contest of computer-generated graphic animations, images, videos, multimedia and VRML works, is now calling for participants in this ninth annual event. The show, which runs from April 4-8, 1996, features conferences, presentations, debates and Q&A sessions on the present and future of computer graphics technologies. Bit.Movie also offers courses and seminars on the hottest trends, the fastest technology and opportunities in the arts, science, education, interactive systems, 3D worlds, and on-line graphic societies and technologies.

If you can't make it to Bit.Movie '96 but would like to find out more about participating in the contest, contact event representatives at Bit.Movie '96, via Bergamo, 2, 47036 Riccione RN Italy; phone: +39 (0) 541 643016; e-mail: bitmovie@mclink.it; WWW: <http://www.cli.di.unipi.it/bitmovie>; ftp: <ftp://cnuce-arch.cnr.it/pub/bitmovie>.

A New Audience

Plusmic, a Tokyo-based CD-ROM publisher, will be distributing Japanese-language versions of *LIGHTWAVEPRO* and *Video Toaster User* on disc! For more information, write to Plusmic, Hachyobori Chuo-Ku, Tokyo 104, Japan; phone 011-81-3-3553-0940; or fax 011-81-3-3553-0945.



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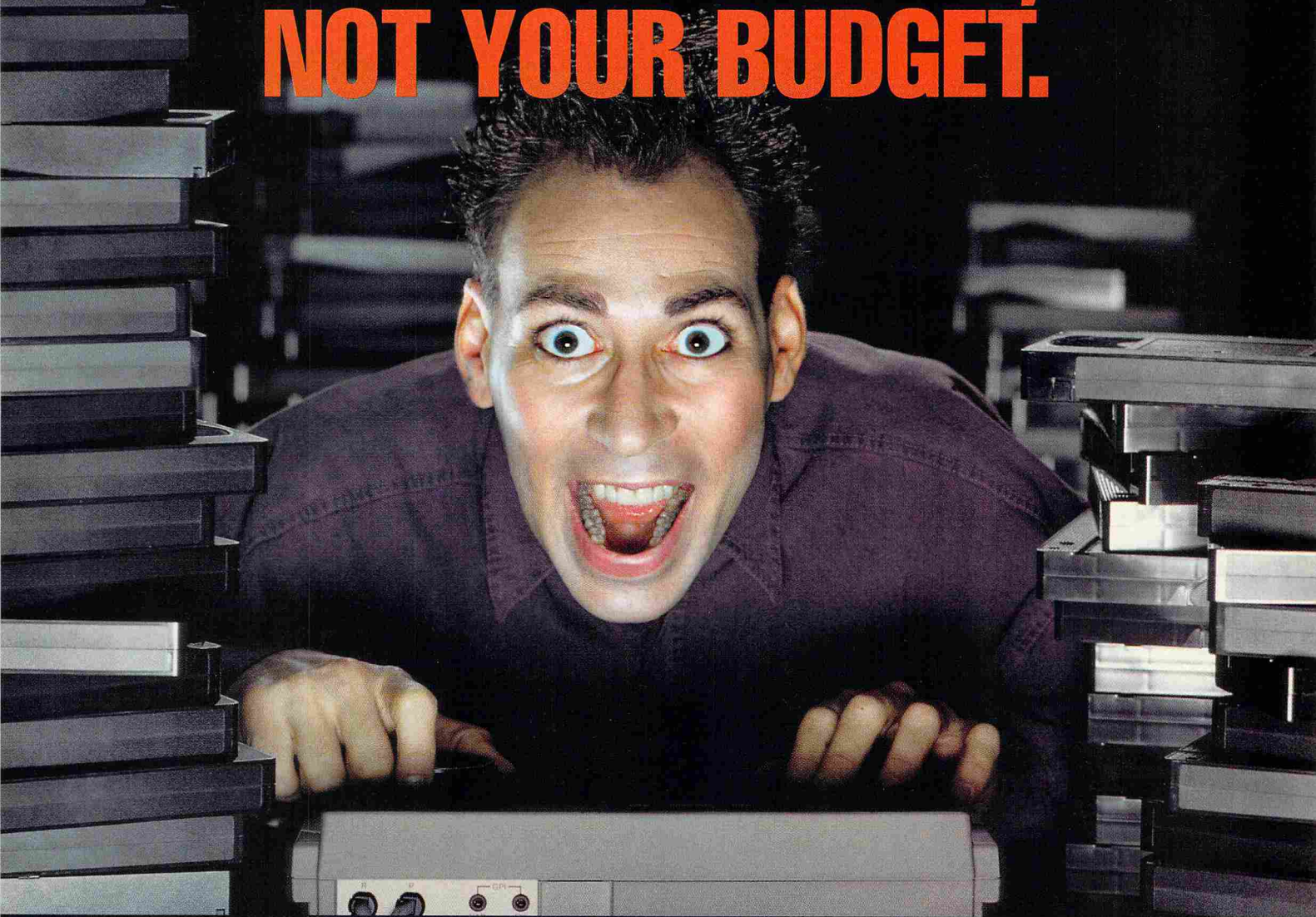
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FOR INFORMATION CIRCLE 154

EDITING SPEED THAT'LL BLOW YOUR MIND, NOT YOUR BUDGET.



THE AFFORDABLE JVC S-VHS EDIT-DESK SYSTEM WITH SUPER-SMART FEATURES AND 100X SEARCH IS PROVEN THE FASTEST.

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Because when it comes to cranking out your editing jobs, there's nothing faster than the speed of our S-VHS Edit-Desk System.

Incredibly user-friendly, the Edit-Desk's BR-S800 editing recorder delivers the accuracy of time code and the power of a blazingly fast, heavy-duty tape drive with 100X high-speed search—the fastest in its class and even faster than some of the highest-priced systems.

The system's new *scene finder*, which works with tapes recorded on any JVC professional camcorder, enables you to swiftly advance to the next scene or return to a previous scene, automatically. Best of all, it happens without

having to memorize any time code or scene location! Both the BR-S800 and the BR-S500, its companion edit feeder, incorporate the same intelligent features including four audio channels, plus a wide variety of plug-in option cards for easy upgrading. And, with all the speed it delivers, there's no better way of keeping your editing on track than with the RM-G800 editing controller with dual GPI ports. All of these features add up to high-quality, professional editing at lightning-quick speeds, and at a price that's very affordable.

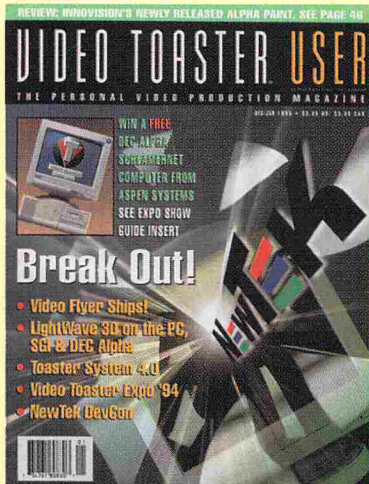


FOR INFORMATION CIRCLE 103

The JVC Edit-Desk System. Limits should be set on price, never on editing speed. For more information or for your nearest JVC dealer, just call 1-800-JVC-5825 and mention Product Code 123

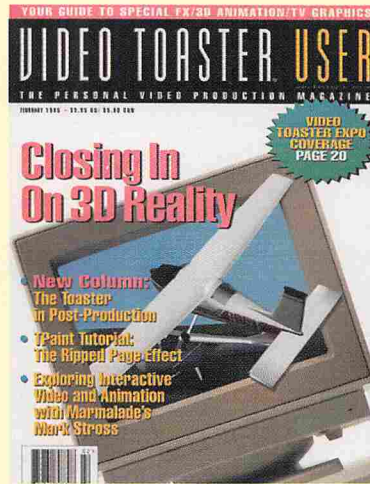
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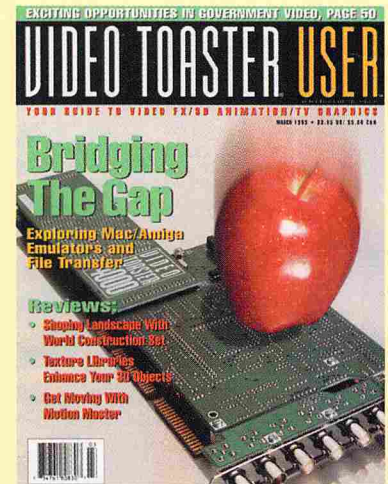
December/January 1995

Seizing Opportunity: Profile of a Leased Access Success Story; How to Avoid Modeling Problems; Making Titles Fly; Alpha Paint, ImageFX 2.0, Pegger 2.0 and Texture reviews



February 1995

The Silent Witness: A Crash Course in Accident Reconstruction; Stross Management (Marmalade profile); Video Toaster Expo '94 Coverage; TPaint Ripped-Page Effect; Paper Clip modeling; MultiLayer, Sparks reviews



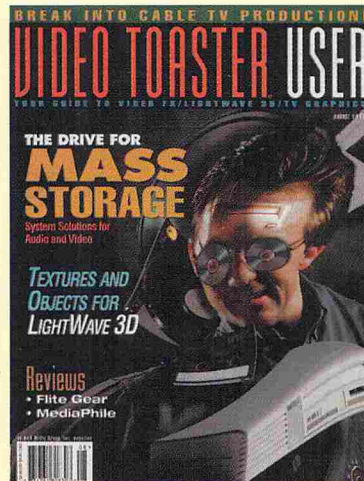
March 1995

The Ultimate Toaster Peripheral: Why Buying a PC Makes Sense; Area 51 profile; Exciting Opportunities in Government Video; Exploring Amiga/Mac Emulation; More Attractive Bevels; Lathing a Light Bulb



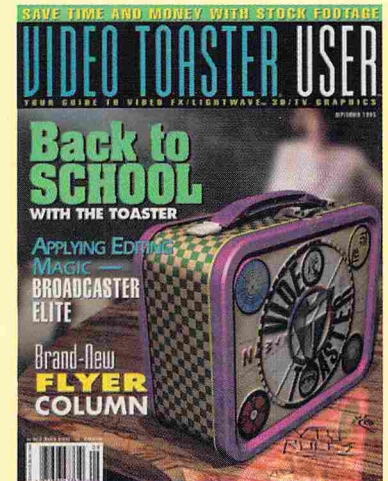
July 1995

The Mighty Effects of Hercules; Speed: A Look at LightWave 3D Rendering Options; LightWave Extras; TPaint and CG Shoot-'em-up; QuickText, Visual FX and Amiga Desktop Video CD reviews



August 1995

Mass Storage; CD-ROM Textures and Objects; Break Into Cable TV Production; Digital Airbrushing, Flyer Audio Editing and TPaint/CG Chiseled Marble Effect tutorials; Flite Gear, MediaPhile quickviews



September 1995

Taking Stock: Affordable Excellence With Stock Footage; The Toasterized Classroom; The Flyer Live; Pushing Pencils tutorial; Broadcaster Elite, MacroForm and Photogenics reviews

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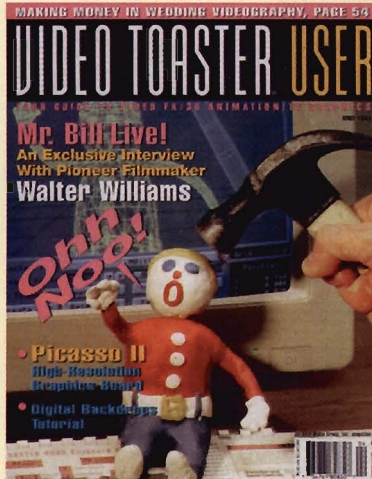
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April 1995

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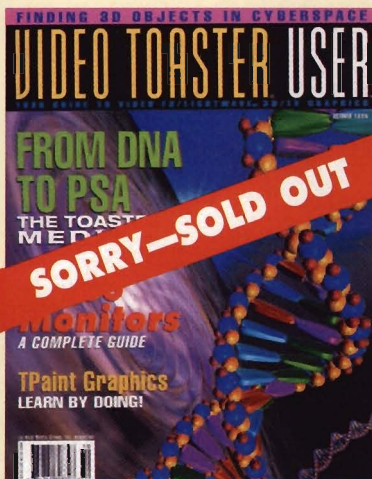
May 1995

How to Plan, Set Up and Survive a Live Presentation; The Toaster Wins Big in Sports Video Production; An Overview of Toaster Paint Programs; The Devil/Angel Effect; CD-ROM Textures; VLab Motion II review



June 1995

Pixel Crunching: A Look at Image-Processing Programs for the Toaster; Multimedia and the Toaster; Double Punch and Paint Parade tutorials; AutoPaint 3.1, 3D Digitizers and WaveMaker 2.0 reviews



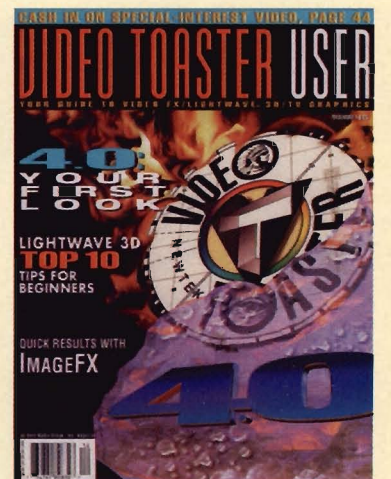
October 1995

From DNA to PSA—The Toaster in Medicine; Raiders of the Lost Archives (Internet/WWW objects); Monitor Mania; Awesome Underlines: TPaint Graphic Separators; Wavey Treasure Chest tutorial



November 1995

The Wavey Awards; Conquering the Animation Business; Area 51 Gives Space: Above and Beyond a Powerful New Look; Darkside tutorial; Perception, T-Net and "Post Prod. with the Video Toaster" reviews



December 1995

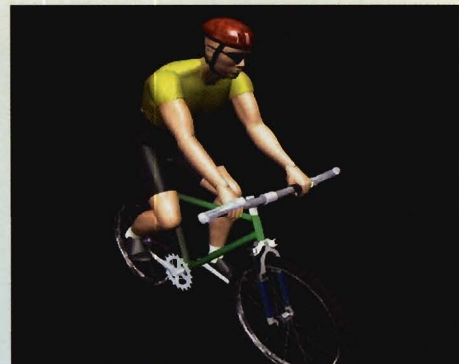
Cash in on Special-Interest Video; Video Toaster 4.0: Your First Look; ImageFX Batch Processing; LightWave Startup Checklist, Part I; Working with LightWave's Camera; Decision Maker, LightWave in.focus reviews

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object totally different. There's this recent one for a futon shop—their logo is a little moon with a blanket hanging over it. So I had the blanket waving with a displacement map, and I had each letter a

different object and made everything fly into one. And then there were these stars around the moon that faded in. My dad did the titling with the character generator. That was a really neat one."



Gabriel explains his animations: "All the objects were made completely in Modeler, with the exception of the spaceship that came with the Toaster. Textures were made in DPaint and Alpha Paint. I also used Humanoid. My system is a Toaster 4000 in a A2000 040 with 18 MB of RAM, a tape drive, a PAR and a bunch of software, including Alpha Paint, ImageFX, ADPro, DPaint, Dynamic Motion Module, Sparks and a lot more."

Along with the commercial work, Gabriel's getting a good look at the local television scene. Archangeles Audio Visual Productions also produces *Archangeles Presents*, a one-hour

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SAMPLES FROM MOVING TEXTURES 100



SAMPLES FROM MOVING TEXTURES 200





show airing on Marin County's local access channel 31, which features his dad's interviews with town locals.

So what inspires an up-and-coming artist like Gabriel? Well,

spaceships, for one thing. "I like Foundation Imaging—*Babylon 5*—on TV. I watch that, and same with *Space: Above and Beyond*. I like the spaceships, but I don't really have a lot of

time to do that because I'm doing commercials. I have all of these weird spaceship objects on my hard drive that I like to play with, and I also like character animation with *Bones*, but I don't really know how to use *Bones* that great yet." The young animator also likes to paint in the computer, using Alpha Paint and ImageFX: "I use those two in conjunction, and I do a lot of cool stuff with them."

Gabriel's ambition—and it probably comes as no surprise—is to be a professional animator. Michael certainly enjoys working alongside his son, and says proudly: "His work is exceptional. Gabriel's extremely talented." But perhaps the best part of Michael and Gabriel working together is the bond it creates between father and son—and that's an important lesson you won't find in any tutorial.



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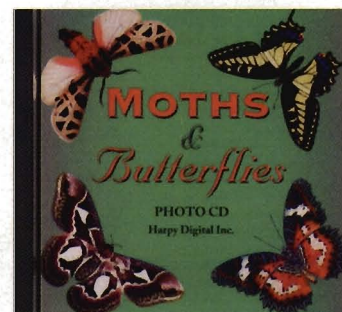
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by Julie Sheikman

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FOR INFORMATION CIRCLE 3

More LightWave Lessons

Product: "The FX Kit for LightWave"

Description: LightWave tutorial book

Price: \$34.95

Lightspeed

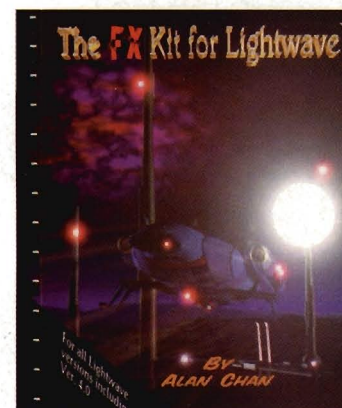
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"The FX Kit for LightWave," written by Alan Chan, is a new LightWave 3D tutorial book that takes readers through the steps required to create interesting and popular objects and scenes in LightWave. The text covers all versions of the ani-



mation program, including 4.0, and is over 300 pages long. It's divided into 11 chapters: "Surfacing

Amiga Editing

V-Station 3300 Amiga Professional

Description: Videotape editing system

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The new *V-Station 3300 Amiga Professional* is an A/B-roll videotape editing system. Its auto-assembly EDL and system control software includes comprehensive on-line help, and the multitasking controller unit provides control of 3 VTRs, GPI trigger outputs and the interface to the Amiga. *V-Station* communicates directly with the Toaster via AREXX, and all of the Toaster's effects—including luminance key, Framestores and CG functions—are easily accessible. *V-Station* includes built-in support for DPS' Personal Animation Recorder. Users can play back PAR video synchronized to the

edits, with different settings for each event, and can also batch-digitize EDL events onto the PAR with ease. The settings of up to four TBCs per event can be programmed and saved via DPS' TBC-III and IV, and the system has built-in support for SunRize's SoundSwitch.



V-Station's multitasking controller unit enables users to mix various brands, tape formats and VTR classes. The system has an extensive array of list management functions. Users can display multiple events on the EDL and perform complex cut-and-paste functions.

FOR INFORMATION CIRCLE 1

Picture Sifting

Product: WaveFilter

Description: Image filter plug-in

Price: \$179.95—Intel;

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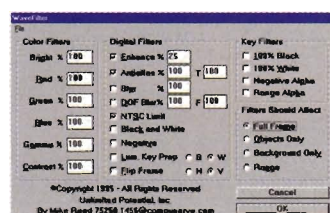
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75250.1456@compuserve.com

WaveFilter integrates with LightWave 4.0 as an image filter plug-in. The plug-in has numerous features, including background image sequence color correction at image time and image enhance, blur, depth-of-field blur, NTSC limit, B&W, negative and flip-frame digital filters. *WaveFilter*'s pass antialias is the plug-in's most popular feature: If you currently use LightWave's medium antialias

with a threshold of 8, you can now use LightWave's low antialias with a threshold of 8 and, by adding *WaveFilter*'s fast antialias feature, achieve very similar results in about one-third of the time. The



plug-in also features composite tools for both luminance and chroma keying. Additionally, the chroma key tool "Range Alpha" combined with "Filter Should Affect Range" can create clipmap sequences that match your chroma key image sequences in a single pass. (See review in this issue, page 52.)

FOR INFORMATION CIRCLE 2

The Natural World Comes Alive

Product: Moths and Butterflies

Description: Photo CD image collection

Price: \$24.95

Harpy Digital Inc.

3616 Maplewood Ave.

Los Angeles, CA 90066

(310) 397-7636

Harpy Digital has announced the release of its first-in-a-series Photo CD, *Moths and Butterflies*. This collection contains 100 images of beautiful moths and butterflies from around the world. Each insect is shot museum-style against a solid background to permit easy selection, and because the majority of the insects are shot from both front and back views, the images can be used for texture mapping. *Moths and Butterflies* is in Kodak Photo

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Nova Design has described
this new upgrade of ImageFX
as "totally Toasterized," refer-
ring to the extensive new
support given to the Video
Toaster. New system features
allow users to paint directly
on the composite video out-
put and transfer images
between the Toaster frame-
buffers and ImageFX. Users
can also load and save



images via an interactive
interface, preview effects on
thumbnails before applying
them, and work on an unlim-
ited number of image buffers

and brushes. New painting
features include improved
soft-edge modes and anti-
aliasing; real-time painting
tools that emulate traditional
media such as airbrushes,
charcoals, chalk, oil and fin-
gerpaints, and watercolors;
and new drawing modes and
styles. Realistic lightning bolts,
pond ripples and waves,
paper and canvas textures,
stars and supernovas, and
crystallization effects are just
several of the new image pro-
cessing and special effects
options available with this
upgrade. The program also
supports new image conver-
sion formats for the Amiga,
Macintosh, MSDOS, Silicon
Graphics and other systems.

FOR INFORMATION CIRCLE 5

Explosive Workstations

Product: NiTro Personal
Workstations

Description: Personal
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need for secondary cache systems. The unique use of cross bar interleaving (XBI) allows concurrent direct connection between the CPU and main memory. The single-processor system includes a 133 MHz Pentium processor, 32 MB of high-speed EDRAM, 4x CD-ROM, 1.0 GB hard disk, VGA with 2 MB DRAM, Ethernet, 1.44 MB floppy disk, keyboard, mouse and a 300W power supply. The dual-processor system includes dual 133 MHz Pentium processors, 64 MB of high-speed EDRAM, 4x CD-ROM, 1.08 GB hard disk, VGA with 2 MB VRAM, Ethernet, 1.44 MB floppy disk, keyboard, mouse and a 300W power supply.

FOR INFORMATION CIRCLE 6

You'll Want to Have This, Too

Product: XM-3701 Series

Description: CD-ROM drives

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\$515—TXM-3701D

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The XM-3701 Series CD-ROM drives support a 1,000 KB/sec. data transfer rate. The drives' fast rotational speed of




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FOR INFORMATION CIRCLE 7

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DEAR JOHN

Face Facts

Playmation Creation Meets LightWave Animation

by John Gross



Dear John" is going through some changes starting this month. You may have noticed that the past few columns have featured mostly LightWave-based questions. There are a couple of reasons for that: (1) I use LightWave almost every day, and (2) the vast majority of queries I receive are LightWave-based.

(Perhaps there is a correlation between the two?)

While the original intent of "Dear John" was to answer Toaster-related questions of all types, I have found that my Toaster-related skills have been pathetically reduced because of what I do for a living. As a matter of fact, I can't even remember the last time my Toaster was fired up. Because of this, I find it difficult to remain in touch with the current Toaster/Flyer world. So "Dear John" is now a LightWave-only Q&A column; "Dr. Toaster," debuting this month, will address the Video Toaster. Remember, LightWave means both Layout and Modeler. I can handle 'em both!

With that in mind, let's get to a question:

Q: I'm working on an animation in which the main character needs an animated face. I have found that the spline-modeling features of Playmation a useful complement to LightWave and have created part of a face in Playmation's Sculpture module that I think will look good on my character.

After I saved the object in DXF format from Playmation and imported it into Modeler, not all of the polygons were facing the same way, though they all appear to be one-sided. I seem to be able to align all of the surface normals, but when I try to render the face in Layout, it has what can only be described as little cuts and slices on its surface, as if someone went at it with an exacto knife. When I tried again, the face rendered smoothly, but the shadows it cast were not solid.

Is there a dependable conversion method or utility that can bridge these applications?

Many thanks,
Adam Carriulo
Somerville, MA

A: Painless DXF importing in LightWave is often a ticklish procedure. The problem is compounded by the emergence of many different types of DXF formats and the fact that few software packages seem to be able to load every type seamlessly. LightWave 4.0 does have improved DXF importing operations (directly into Modeler, but not

LightWave), but some cleanup is often necessary.

The problems you describe are typical for imported objects. The fact that your shadows were not solid tells me that your object itself isn't. Though Phong shading (smoothing) can hide many surface problems, cast shadows are always based on actual object geometry. If you have a hole in your object or faceted polygonal edges, they will undoubtedly show up in your shadows.

Here's a list of things you should check for (in order) to obtain error-free rendering on any object:

(1) *Extraneous points*—Select point statistics (w) to check for points in your object that belong to O Polygons. If any of these exist, select them by pressing the (+) button and then delete them. Though these points won't cause any rendering errors per se, they are unnecessary and should be removed for the sake of cleanliness.

(2) *Single-point polygons (particles)*—Select polygon statistics (w) and select any polygons that consist of 1 Vertex. If you do not want any single-point polygons, press the (+) key to select any listed and then delete them. They can show up as little specks or dots on your object.

(3) *Two-point polygons (lines)*—Select these by pressing the (+) key next to the 2 Vertices field in the polygon stats requester (w). Delete them. Two-point polygons can show up as seams or lines across your object. (Note: Check for one- and two-point polygons after using Weld on a group of points that make up one or more polygons.)

(4) *Duplicate points*—Points that exist in the same space can produce rendering errors, especially if they are connecting adjacent polygons that should be sharing points. Your "exacto cuts" could be due to this. After making sure no points are selected, select Merge (Tools or m) and choose Automatic, which will merge points that exist in the same space. (Note: After merging points, you may want to check again for one- and two-point polygons.)

(5) *Duplicate polygons*—Two or more polygons sharing the same points and facing the same direction can wreak havoc in an animation. LightWave doesn't know which polygon it should render; sometimes it renders one and sometimes another. As a result, you

continued on page 31

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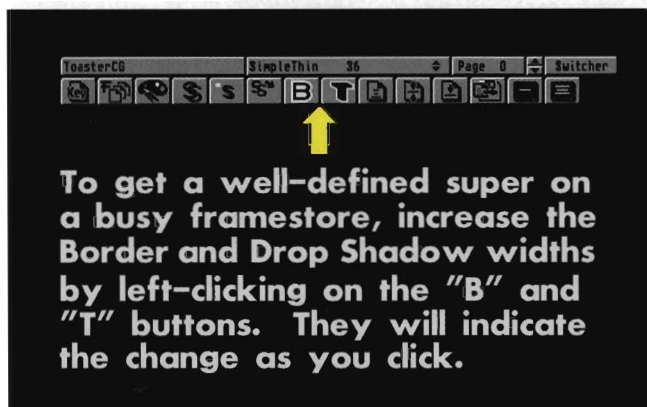
CG and TPaint Secrets Revealed



by Burt Wilson

When George Washington Carver decided to focus his attention on the peanut, he held one of the little goobers in his fingers and talked to it. "I want you to tell me everything about yourself," he said. And Carver went on to discover all of the peanut's secrets.

Whether Carver knew it or not (I think he did), he was applying one of life's most potent principles to his task: the more we focus our attention on something and learn about it, the more that something will reveal its secrets to us. We may focus consciously or, out of necessity, unconsciously, but the result will always be the same. That upon which we focus is required by natural law to expose its deepest mysteries.



And so it is with the Video Toaster. If you talk to it and ask it to reveal all of its facets, it eventually will. Ask and ye shall receive. No, this is not some kind of voodoo mumbo-jumbo. The talking and the asking and the digging sharpen your receptivity to what you are doing. Where you might have previously taken something for granted, now you will find yourself following a network of connections that will lead you into new areas of discovery. Try it. It really works.

More Toaster Tips

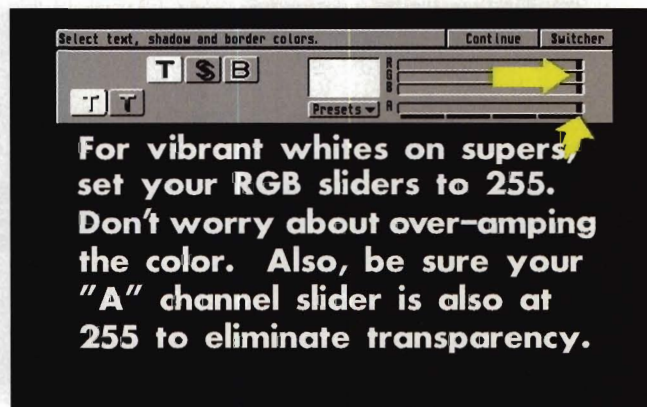
Sometimes you may find ToasterCG putting out text that is dim and somewhat transparent. Well, it is! Unless you're looking for the transparent effect (I use it in about one of every 50 commercials), you should go to the color palette, click the Shadow and Border buttons, and move the Transparency sliders (on the A channel) up to 255 before you import any text into the CG. Now your supers will be sharp and your drop shadows will perform the separation function they are supposed to.

Also, I have no problem with boosting the text face

sliders—click on the (T) button—up to 255. I know, 208 is the broadcast standards limit, but the improvement is highly noticeable, and regardless of the boost, they will not vibrate all over the place once output has occurred.

I also suggest, having much experience with this subject, that you use only white or yellow for most of your supers and text graphics. Sure, other colors will be just fine in certain situations, but white and yellow do the job better than anything else.

Don't take my word for it. Go into the CG and type out the same line of text over and over again, filling the page with it. Then assign a different color to each line. Now take a look at the color up close. Use a mag-



nifying glass if you wish. See how cloudy and blotchy most of the colors are? Only white and yellow (and their close derivatives) are clean and sharp. I expect Toaster 4.0 to be better. I'm also looking forward to sizing and shearing text in Toaster 4.0's CG. Nevertheless, I'm glad I have Alpha Paint, which produces great antialiased colors.

Be sure to kern your text after you enter it into the CG. There's nothing worse than seeing letters all run together or spread apart in odd places—as they might do around a Y, W or A. These three letters are your biggest natural offenders. Just place your cursor on a letter, hold down the Alt button and tap your arrow keys in the direction you want to move the letter.

Another thing. Frequently you'll be called upon to superimpose text over a background that is extremely busy. A simple solution to this problem is to increase the border or text shadow size by clicking on the (B) and (T) buttons on the main CG screen. Your text will now be surrounded with more black (or whatever color you're using), providing a cushion for your text and making it more visible.

Sound Advice

Being an older guy and a musician who is a little hard of hearing (too many hours in front of loud drummers), I'm very conscious of the music levels behind the narration track of a TV commercial or video.

Please take into consideration the age of your target market when you're mixing audio. There are millions of people out there who, like me, have trouble separating sounds when they're sitting about 10 feet away from a TV set. If you mix the levels too close together, we're not going to hear, much less understand, your message.

OK, MTV is different. But give what I've said a second thought when your finger is on the music level slider during a mixing session. What may sound great to you (especially on big studio speakers) may be completely unintelligible to older viewers, or on small systems.

As a sidenote to the above, always have a small TV or radio-type speaker to play your finished mix-down through. It will tell you much more about what you need to do than anything else. Do not trust big studio speakers. They are for hearing glitches, not for the final mix-down. By the way, for quite some time, Mackie has sold a small, four-input mixing board that is extremely easy to use and does a highly professional job.

ToasterPaint Tips

Here are a few little hints that can save you big time. If you're working in graphics and do not plan to edit, go to the Setup screen and load the GetSmall project. This function will get you up and running faster.

If you're entering and exiting ToasterPaint a lot, hit the right mouse button after you enter TPaint and a requester will appear, asking if you want to continue or cancel the rendering of the Framestore you've been working on. If you are going to be working on something else, click Cancel. The Framestore will stop rendering and the control panel will instantly appear.

If you're cutting out a full-screen map of a Framestore that you are planning to texture-map into a smaller area, start your cut about 3/8-inch diagonally down from the top left

corner of the screen and drag the cut to about 3/8-inch up from the bottom right corner of the screen. This way you will avoid any fuzzy edges around the periphery of the image. These fuzzy edges can be caused either by the Toaster or by faulty registration in your camera.

When you're texture-mapping a Framestore into a smaller area, use one of the medium-size square brush points. You can fit these better into the upper left-hand corner, where

you will start mapping. It's difficult to do this with the smallest square brush.

When you're using red or pink or yellow—most colors, actually—to draw out a square on a Framestore, you will see that the horizontal bars are right on but the vertical bars appear fuzzy. And each time you save a Framestore, the vertical bars will look increasingly fuzzy. Don't try to compensate for it; your efforts will be in vain. Pixelization is the cause—

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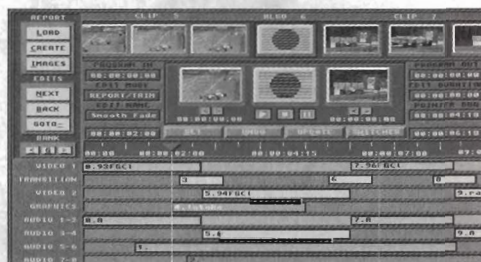
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FOR INFORMATION CIRCLE 105

FLYER POWER

it's one of the things we have to put up with when using the Toaster's graphic tools.

If you want to cut out an oval, cameolike piece of a Framestore and texture-map it down on another Framestore, you can cut out the shape using the oval tool, but you cannot texture-map it down using the same tool. You will have to use the rectangle tool only for precise texture-mapping. You do get an unusual effect by using the oval tool, however, and

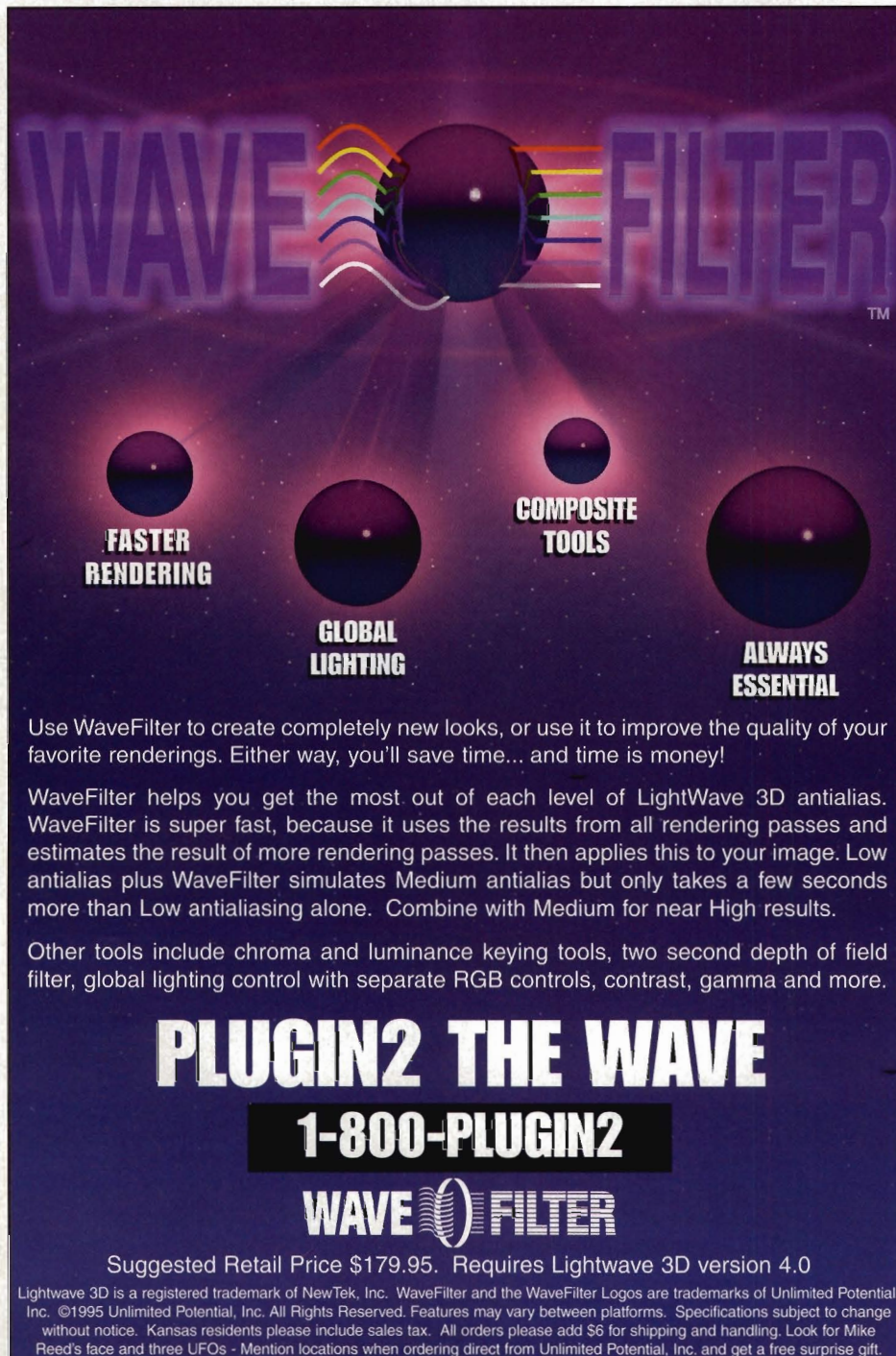
everyone should experiment with it at least once to see what it's all about.

You should always save works-in-progress in the RGB files when working in TPaint. Only save them as a Framestore when you are finished. If you do not always do that, you may find that a Framestore is degrading like crazy around all the sharp edges because you saved it as a Framestore each time you worked on it.

There's a way to remedy this problem. Using the smallest brush, the rec-

tangle and the cut-out tool, cut out a small rectangle of color from an area in the Framestore that is not degraded. Then stamp it down right at the edges of horizontal or vertical bars, or graphics. This process will help clean up your Framestore. Still, saving work in the RGB file is the best advice to follow.

Most owners of small companies want us to shoot the outside of their place of business, which usually has windows. The result: reflections of things going on in back of you. Not



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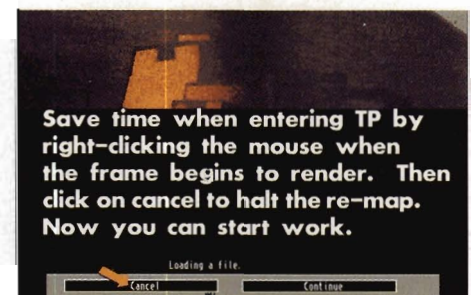
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too cool. You can avoid this problem by finding an area in one of the windows where you only see blue sky, for example, or a kind of shiny darkness. Cut out a rectangle of one of these places and start stamping it down inside all the windows. Voilà! You have single-toned windows! This is a good place to super or place text for a logo, too.

Another instance you'll run into is lifting graphics off of a black background and stamping them down somewhere else on another Framestore. Frequently you will find a lot of black artifacting has been lifted off and stamped down with your graphic. You can get rid of this artifacting by refilling the background with TPaint's Fill tool. Cut out a very small rectangle of the color the artifacting is laid over and stamp it down over the artifacting. This may take awhile and you may have to use the magnification tool to get it right, but it works!

OK, that's enough for this month. E-mail me if you have specific questions about post-production problems. Happy Toaster Posting!

VTU

Burt Wilson's latest book is "Complete Post Production with the Video Toaster." E-mail him at burtwilson@aol.com or 12507.2530@compuserve.com.

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FOR INFORMATION CIRCLE 107

THE FLYER SUITE

The New Flyer

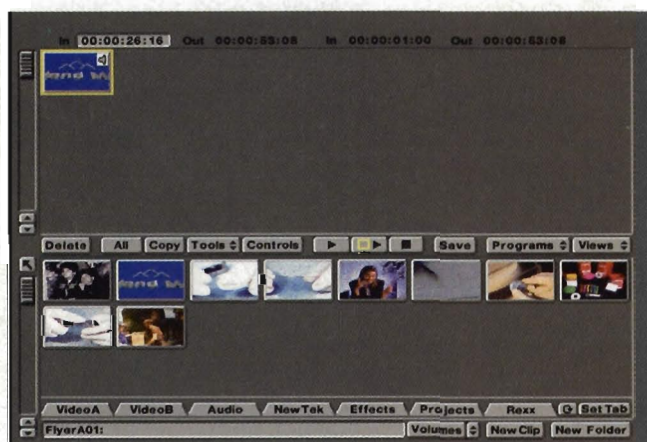
It's Getting Better All the Time!

by Frank Kelly



Those of you who have been with the Flyer from its early stages have seen many versions of its software. At press time, I am working with a beta copy of what will be the long-awaited 4.1 release, and there are many significant improvements in this version.

The process of cutting action shots from two different cameras is much easier. Now, when you create a new sequence (prior to adding effects), you will see the last frame of the previous clip on the preview monitor while you are setting the inpoint for the next clip. Since the program monitor shows the clip you are adjusting, this will save a lot of experimentation by allowing you to view the in/outpoints of an edit simultaneously.



With the Flyer's new Quick Edit feature, users can set in/outpoints without opening the main control panel. Note the in/out time code numbers on the top.

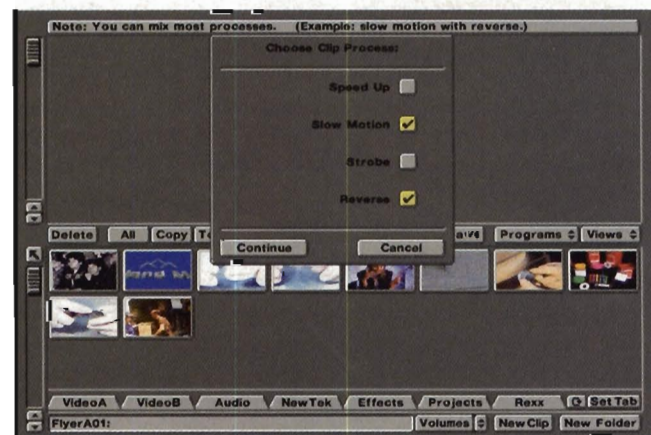
Setting in/outpoints for any clip in your sequence can now be accomplished without having to select its control panel first. After selecting your clip in a sequence, you simply hold the Ctrl key while pressing the mouse buttons (left for inpoint, right for outpoint). Dragging the mouse shuttles through the clip in the same manner as the control panel method. To move in smaller increments (frame by frame), you would use the left and right arrow keys.

While in this "Quick Adjust" mode, you will also notice that the time code for the clip's in/outpoints is displayed at the top of the RGB display, and that you can toggle between video and audio settings by pressing the spacebar. If you want to move both the inpoints and outpoints together (to preserve the length of an existing clip), hold down both the Shift key and the Ctrl key. While in this mode, you can also resynchronize the audio start or end to its video in/outpoint by holding down the Ctrl, Shift and Alt buttons. This procedure will reduce the need to use the control panel to set in/outpoints, but there are

improvements in the clip's Control panel's capabilities that will make them more useful when dealing with audio levels. You can now adjust the audio playback level of a clip whether it's playing or not. The audio will "loop" through the in/outpoints, allowing you to adjust the overall volume, volume by channel (left/right) and output source (left/right/stereo/mono). An added option called "Audio New" automatically sets the audio to fade in or out to coincide with transition effects. Another new shortcut makes entering the Control panel mode much faster: simply hold down the Alt key while double-clicking on the clip's icon to enter its control panel.

You can now replace a clip in a sequence with another clip while preserving all of the original Control panel settings by using the "inherit" feature. To have the new clip "inherit" the previous clip's settings, simply hold down the Alt key when dropping the new clip onto the existing clip. (Incidentally, a new feature has been added to avoid accidentally replacing the wrong clip. A warning box will appear, asking if you want to "overwrite" the existing clip with the new one.)

The custom start-up icon also has a new feature. Besides allowing you to start up the Flyer in your preferred view mode, the start-up icon adds a number of useful AReXX commands to a new "Tools" drop-down menu that is accessible directly from the Switcher view. You can add or modify this list quite easily to customize your own Tools menu. There are custom start-up icons provided for LightWave and Project/Files view. When using the Project/Files custom start-up settings, the Tools menu will display options for entering the new Flyer Process Controls screen. From this screen, you can select a number of commonly used process options, including slow or fast motion in either forward or reverse, and Strobe.



Flyer users can now process their video clips directly from the main interface without having to use ToastaPaint or an AReXX script.

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Subsequent requesters allow you to select the new name of the resulting clip and the parameters for the process selected. These process functions no longer use TPaint and provide much-improved output quality and faster processing times. The processing times will be dependent on your particular system configuration, but a marked improvement has been made and you will definitely see a difference over previous incarnations of these features. The Tools menu also allows you to enter many of the shortcut edit modes and lock/unlock features without having to remember their keyboard shortcuts.

A number of useful new ARexx scripts can be added to the tools menu, including Volume relative and Volume absolute. These scripts allow you to globally set a volume level for your project. Worth noting is that other software using ARexx (such as Flite Gear) will likely create special uses for the Tools menu, addressing special features likely to be added to the Flyer in the future.

While we're on the subject of audio

and volume, there are now VU level meters displayed on the Control panel when you capture footage! Though this is certainly more aesthetically pleasing, it's also quite useful. There are peak overload indicators and slow-reacting, peak-hold displays. The visual nature of the meters makes easy work of getting consistent sound levels from different sources.

Overall, the general performance of the Flyer 4.1 is smooth and responsive! Many of the delays associated with screen refreshes and moving between Flyer/Toaster applications have been significantly reduced. There are now more informative warning dialogs when an edit sequence cannot be performed because of improper or out-of-range settings on clips or other elements. In addition, some of the effects that had been previously removed have now returned.

The Key Hole effect, along with many previously unusable overlays, now functions properly. When accessing the Digitize Control panel, you will see two new input choices, Flyer Y/C and Flyer In. Both functions are only available

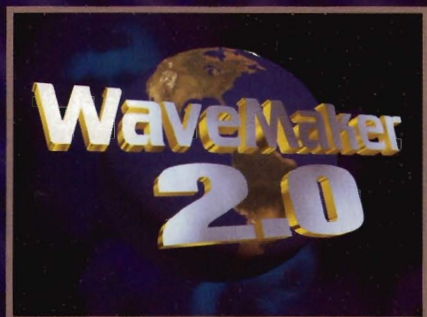
with NewTek's planned Time Base Corrector option. At press time, no release date has been announced. Flyer Utilities Updated, Flyer Format and Drive Speed have now been incorporated into Flyer HD Tools. There is a totally new look and feel to the interface and more



New Flyer 4.1 audio VU meters.

options. One particular option, "Short Stroke," will write a header to slower areas of the drive during formatting to prevent those areas from being used. Though Short Stroke can decrease some of the area available for storage, it can

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ensure trouble-free performance when using the higher-quality modes (if your drive tests out as being capable of the higher-quality modes like HQ-5). A few settings are best adjusted by those with more expert knowledge, but these settings can be loaded from a file, making it possible for dealers, manufacturers or other users to upload successful settings via BBS systems or from disk for use by those with the same type of hard drives.

Another Flyer Hard Drive Question

From Myron Achtman via e-mail:

Q: Can you imagine owning the newest, state-of-the-art VCR and not being able to buy top-quality tapes for it? This pretty much describes the Video Toaster Flyer. It's a great editing system, but it's nearly impossible to find hard drives that can record top-quality (HQ-5). Which drives support HQ-5 over their entire surface? Also, how effective is the Storagepath RAID system advertised in November 1995's VTU? How good are the IBM Ultrastar XP (4.5 GB) 7,200 rpm dri-

ves? What about Seagate's 9 GB drives? As video producers, we cannot afford to dish out \$8,000 on hard drives that don't do the job. We urgently need facts.

A: Drives that will support recording of HQ-5 may not do so over the entire surface—they sometimes can deliver only 80 percent to 90 percent capacity depending on the contiguous space available after bad sectors are mapped out. This space will vary from one drive to another, even for those with identical firmware. NewTek has been working with drive manufacturers in an attempt to identify the firmware versions of particular models that perform well enough to meet the specifications required for HQ-5. Currently, the only drives that have consistently tested with high enough marks to deliver nearly all of the formatted capacity at HQ-5 are the Atlas 2 GB units. There have been significant improvements in the firmware of the Seagate 9 GB Elite series, which will allow for HQ-5 recording up to about 85 percent capacity without stutters or

dropped frames. The IBM Ultrastar XP 4.5 GB units (model 34320) are reported to perform with 100 percent of formatted capacity but only after some special mode settings are changed by a PC DOS utility from IBM called "Code Update," available from the company's BBS. When changing the firmware settings of the drive, you'll need to disable predictive failure analysis (found on page one of the docs). Page 8 covers your need to enable write caching and set the number of read cache segments to a value of 1. Once these settings have been saved and the firmware is downloaded to the drive, you can format the drive with the Flyer HD tools utility and expect to see a rating that will be high enough to deliver HQ-5 over 100 percent of the drive's capacity. I tested the Storagepath RAID system, which worked flawlessly, without a stutter or dropped frame, using HQ-5 mode up to its full capacity.

That wraps it up for this month. Next time I hope to bring you a more hands-on report of 4.1's newer features.

VTU

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Tips, Utilities and Indexes

by Geoffrey Williams



I have written in the past about collections of tips that are gathered together from the online Internet LightWave mailing list (there's also one for Toaster users) and the LightWave Usenet newsgroup. These freebies continue to be updated, and a couple of new versions have been brought to my attention.

Thomas Healy's LightWave Tips and Tutorial (LWTT2.lha) has been formatted so that you can print it out easily. This compilation includes tips for both PC and Amiga versions of LightWave, and it has a good list of resources at the end. Since it is formatted to be printed, an index of some sort would have been helpful. Perhaps some other volunteer will add this in the future. LTT is quite large (over 13,000 words), so you are certain to find valuable animation information.

Power Tips Pro Volume 1 (PTP_AG1.lha), by authors Dean Scott and Ronnie Norwood, is in

Finding That Useful Article

If you have been a thorough reader of AMG publications and have been holding on to those back issues, Ross Fenmore has done you a huge favor. He has created AVIDIndex, an index for back issues of all Avid publications, including *Video Toaster User*, *LIGHTWAVEPRO*, *Amiga-Video Journal*, and even *Breadbox*, the early incarnation of *VTU*. The index is in a database format known as RFF, which is ASCII text-based so that it can be easily loaded into a wide variety of databases or word programs, even on the PC and Mac.

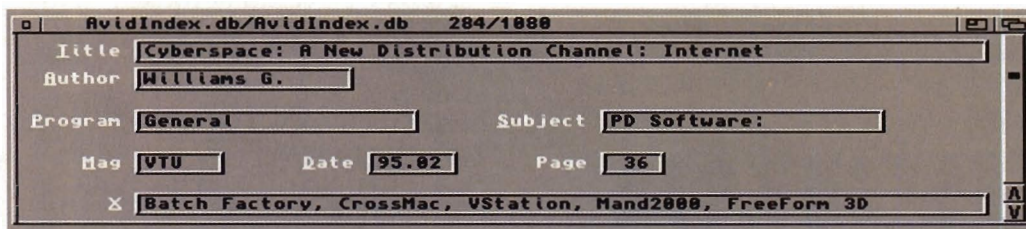
The amount of effort that went into this utility is unbelievable. It's the sort of thing you'd like to do yourself, but realize there's no way you will ever get around to actually doing so. All of my columns are indexed, and in the descriptions, Ross mentions the names of the programs featured in each column. I imagine other readers who have been trying to remember in which column I wrote about a certain utility will also appreciate it.

Here's how the index works: A program field names the software or hardware the article is about, so you could search for articles about the Toaster Switcher, for example. The subject field is broken down into a wide variety of categories. The description field provides a short but

succinct summary of each article. Ross, a big personal thank-you from me, and I am sure other readers will express the same sentiment.

Though it will work easily with any database, the AVIDIndex is set up to work directly with a popular Amiga PD database program called DB. The latest version of DB that I found on the Net is 2.9. It was written by David Ekholm and is a fast and easy-to-use database. DB can load database files in ASCII format that have tabs separating the different fields, and it can also load files in the RFF format. (RFF is a simple text format that can be loaded into a text editor and then modified.) The first few lines of the file contain information about the different fields, and these can be easily edited to modify or create a new database.

With this program you can create a database of names and addresses, and it will even autodial the phone numbers for you. You can easily set up a simple database of clients, or use DB to track jobs



AVIDIndex puts descriptions of all the information from your favorite mag in an easy-to-use database program.

AmigaGuide format and is very well-organized. The top menu lets you choose between Layout, Modeler, General and Miscellaneous tips. If you go to the Layout section, you can choose between topics such as Bones, Camera, Effects, Envelopes, Lights, Motions, Morphs, Surfacing and Other. Under each one of these subjects is a list of different tips you can access with a simple click of the mouse. Power Tips Pro is easily the best-compiled and easiest-to-use selection of free LightWave tips I have seen, and very much worth downloading. A version runs under Windows (3.1 and 95), and both versions can be found on the LightWave Tomahawk 3D objects site (tomahawk.welch.jhu.edu). One interesting aspect of this project is that the two authors have used the Internet exclusively in their collaboration, with one of them on a PC and the other on an Amiga. The Internet really *is* changing the way people communicate and work!

and projects. You can also load in other databases within any program that saves in the RFF or ASCII formats. If you don't need the extensive capabilities of a full-blown commercial database, for simple jobs, DB may be perfect. It offers very fast searching capabilities, includes ARExx support, creates filters, is both mouse- and keyboard-driven, and lets you do very specific multiple sort orders. And, of course, it is perfect for viewing AVIDIndex.

LightWave Macros

Amiga LightWave 3D users still have the great advantage of ARExx macros, and they continue to appear both commercially and in the public domain. Frederick Ohrn's Parametric Surfaces (Psurf.lha) is used to generate a parametric curved surface from mathematical functions. Monte Ohrt's Bubbles will convert selected points to randomly sized spheres, cutting the initial object. You can select the upper and lower radius boundaries. Monte also wrote Points to Spheres (Points2S) to convert selected points to spheres, cutting the initial object. His Bezier macro lets you use selected control points to create a bezier curve.

Measure (no author listed) lets you select two points and, after running the macro, gives you a more accurate measurement than the measuring tool. Nir Hermoni's Absolute Position (AbsPos.lha) will place an object using the absolute coordinates of its center. His archive RotScl.lha includes two macros: Rotate on Center allows you to rotate an object by its center, while Scale on Center lets you scale an object by its center. Stuart Ferguson's SEQ macro takes a shell command with special pattern codes embedded in it and issues a sequence of shell commands generated by filling in the patterns. For example, it would be very easy to use it to generate a single line command that would delete every other file in a series of frames, or rename only the odd-numbered files. SEQ is very flexible and quite easy to use once you understand the concepts involved.

Dear John continued from page 20

can get strange lines in a surface or flashing polygons. Select Unify (Polygon menu) to delete all but one of the polygons sharing the same space. (Note: Unify will not delete if two polygons are facing opposite directions.)

(6) *Wrong-facing polygons*—Polygons facing away from the camera may show up as "holes" in your object. Use Align (Polygon menu) to force all polygons to face the same way. This isn't always flawless, depending on the object, but generally you'll get really good results. Remember that Align may flip all of your polygons so they face inward. If this happens, simply use Flip (Polygon menu or F) to turn them around. If Align doesn't work on your object or you keep doing it and it keeps flipping polygons, check for all of the situations above. If they seem OK, you may have to go and flip some polygons manually.

(7) *Non-planar polygons*—Non-planar polygons can exhibit all sorts of rendering errors. Select polygon statistics (w) and click the (+) button next to Non-planar. Any polygons that fall outside your defined Flatness Limit (Objects/Options or o) will be selected. These should be tripled. If you're going to deform your object with displacement mapping or bones, all polygons should be tripled.

While there are some more factors that can affect rendering quality (such as Smoothing Angle), checking these seven things before you save an object will help you prepare your objects to render properly. Now, if you can just get all the rest of it down...

VTU

John Gross is co-director of special projects for Amblin Imaging and editor of LIGHTWAVEPRO. Light-Wave questions can be sent care of this publication or electronically to jgross@netcom.com.

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John Follett Jr.'s AlignLayers (Align.lha) lets you align objects in front layers that are referenced to background layers. It will work on multiple objects in multiple layers and is very handy when you want to perform a movement using a single point or polygon rather than the entire object, as it will use just the bounding box of the selected points. Gonzalo Garramuño's MoveScene 3.0 will move a LightWave scene file to a new location. It moves all of the images and rearranges the scene file so that the objects will load from the new directory that you specified. MoveScene 3.0 will also take into account when you are using floppy diskettes to transfer the files and measure how much space is left, requesting new disks and initializing them for you in either PC or Amiga format. The utility will even use LHA (a popular archiving program for transferring multiple files compressed into a single file) to compress the scene file and make disk transfer even easier. If you are transferring the files to a PC, it will automatically shorten file names to the required eight characters and convert spaces in file names into underscores.

form. L-systems is a very popular way to describe organic and fractal-based objects, as it uses recursion to re-create the object from the L-systems description. It is also possible to vary the form as it is converted (e.g., a single tree description could be mutated slightly a number of times to create many slightly different trees.)

The main program is L-Parser, which loads files with the .ls extension and allows you to convert them to POV, DXF or raw ASCII files. Also, numerous options allow you to mutate the object. LViewer allows you to display .ls, .vol, .3DS (3D Studio binary), .ray (FractInt raw files) and .pol (Renderstar temp files). On a 16-color screen you see a wireframe of the object, which you can rotate along the X-, Y- and Z- axes using the keyboard arrow keys. LV2POVID converts .ls files to POV files or ViVid 2.0 files. The archive also includes lots of examples of .ls files, and information on where you can find more of them.

You may be quite excited about all of this L-systems stuff, but if you try converting the .ls objects into DXF format and then load them into LightWave via TIO, you will

number of points. There's also a number of other utilities included. LWLO provides info on objects or "Modeler only" object files. The "Modeler only" file is one that LightWave Modeler has saved in layers. Earl wrote this primarily to help him check to see that his converter was working properly, but it does provide useful information about an object. SCALE will scale an object by the specified X-, Y- and Z-axis values, which is the same thing as choosing SCALE and entering X, Y and Z values from LightWave Layout. SCALETO will scale an object to the size of another specified object. READRAW reads and displays the .raw file that is created by the DXF2LW program.

Disks Times Two

I am doing something a little different this month. Normally, I offer a disk containing all of the programs I write about in each column. But since I covered several PC-based utilities that will only be useful to those with a PC, I am offering two different disks. If you have a PC, ask for the LW5-PC offer. This PC-formatted disk contains all of the Amiga- and PC-based programs. You can then copy the Amiga programs via a double-density, PC-formatted floppy onto your Amiga.

Unless you have high-density drives and a version of CrossDOS or Workbench that lets you read high-density disks, your Amiga will not be able to read this disk. Amiga-only users should ask for the LW5-Amiga disk offer, an Amiga disk formatted at double density that can be read on any Amiga. Because this format has less room, it will contain only the programs that can be run on the Amiga. To get either disk, send \$5 to Geoffrey Williams, LW5 (specify PC or Amiga) Disk Offer, P.O. Box 10095, Glendale, CA 91209.

VTU

Geoffrey Williams is an independent multimedia developer and video producer based in Glendale, Calif. Williams can be reached at gwilliam@netcom.com.

The screenshot shows a database window with the following fields and values:

| fieldIndex.db/avidIndex.db 284/1000 | | | |
|---|--|---------|--------------|
| Title | Cyberspace: A New Distribution Channel: Internet | | |
| Author | Williams G. | | |
| Program | General | Subject | PD Software: |
| Mag | VTU | Date | 95.02 |
| | | Page | 36 |
| X Batch Factory, CrossMac, VSitation, Hand2000, FreeForm 3D | | | |

Power Tips Pro gives LightWave animators information they can use in a large, easily accessible format.

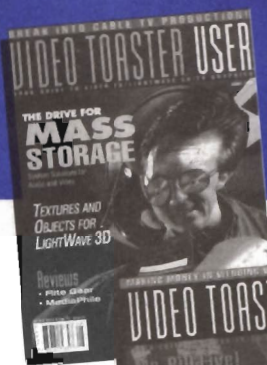
PC LightWave Utilities

The exciting news is that LightWave-related utilities are finally starting to appear for the PC, so I will include a few this month. I've only recently found enough to write about. The Tomahawk Internet site is the best source I have discovered for these utilities.

Laurens J. Lapre of Renderstar Technology is the author of LParser3, a great self-extracting suite of utilities. The utilities are designed primarily to deal with L-systems objects, which are based on a set of rules that describe a 3D

discover that the converted files are quite large and take a very long time to load. Thanks to Earl Terwilliger, this delay is much less of a problem. His archive, LWUtils, contains DXF2LW, which will convert the DXF files to LightWave format and merge points to reduce their number.

The conversion is relatively expeditious, and the converted objects will load with considerably greater speed. LWUtils will work on any ASCII DXF file that has 3DFACE entities, and it will create objects with the smallest



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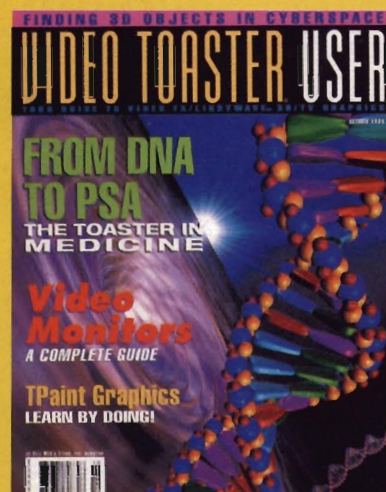
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TAMING THE WAVE

An End to a Hazy Day

Ground Fog That'll Envelope You

by David Hopkins



Welcome to another installment of "Taming the Wave," the column that exposes the nifty tricks and tips hidden deep in the heart of LightWave 3D. In August 1995's *VTU*, we explored the possibilities in creating atmospheric conditions using fractal noise-covered spheres nested within one another. This month, we're going to see what else we can do with the same sort of technique.

One of LightWave's most interesting effects is Fog. Fog allows you to specify a background color, color gradient, image or sequence, the color of which will be added to objects in your scene, resulting in a more dramatic presentation. Fog is a fun effect, and I use it frequently. Recently, I found the need for some *ground* fog in a scene I'm creating for UFO Productions' feature film *DarkDrive*. Unfortunately, LightWave can't do ground fog. Or can it?

Ideally, an animator would be able to limit the maximum height of fog, making the entire process much easier. But LightWave presently has no such function. Another solution could be to use gas-type objects. Particle systems can also create this sort of effect. So is ground fog a fantasy for a future LightWave release? Well, yes, but there *is* a way to fake it now. Be warned: this trick is not for the faint of rendering speed. But the results are well worth it.

First, construct a ground plane. Enter Modeler and create a flat box in the Top view. To make sure that we are dealing with objects of the same size, use the Numeric option to enter the following values: X Low = -150, Y Low = 0, Z Low = -150, X High = 150, Y High = 0 and Z High = 150. Units should be in meters. Make sure that the polygon faces up in the Face view; if it doesn't, flip it with the (F) key. Name the surface "Ground" and export or save the object as "GroundPlane.lwob" or something similar.

On layer 2, create a wide, short polygon in the Face view that stretches across the width of the ground plane. Using the Numeric requester for a box again, set these values: X Low = -150, Y Low = 0, Z Low = 0, X High = 150, Y High = 5 and Z High = 0. Make sure that the new polygon faces down in the Top view by switching to Polygon Select mode and clicking it, ensuring that it will face the camera when viewed in Layout. Name this surface "GroundFog". Copy the object to layer 3 (presuming you started with a fresh



Few effects can provide the gentle, comforting presence or the cold, menacing gloom of a good fog.

copy of Modeler) and put layer 1 in the background.

Now, choose Clone from the Multiply options. Create 15 clones extending into the distance in the Z plane, with a Z offset of 10 meters. Export the resulting object as "GroundFog.lwob" and return to Layout.

It's time for some surfacing. Select the GroundFog surface. Set the Transparency level to 100%. But wait—what's the point of having the clones there if they're invisible? Well, we're going to apply a Fractal Noise texture to our object, but it is important for the main body of the surface to be transparent. Click the Texture button next to Transparency and choose Fractal Noise as the Texture Type.

Leave Texture Size at the default values of 1, 1, 1. Turn World Coordinates on. This setting will cause all of the various polygons we created to share a common pattern. Don't think that the exact same fractals will appear on each surface, because they won't. Instead, the texture can move smoothly from one panel to the next. This is where the next setting, Texture Velocity, comes in. Set it to X = 0, Y = .05, Z = .05. Now the texture will move very slowly (in relation to the 1, 1, 1 Texture Size) up and into the distance.

Next, set the Texture Falloff to X = 0, Y = 30, Z = 0. Since the bottom of these polygons rests at Y = 0, this will cause the texture to be fully implemented at the bottom and faded away toward the top. With our fog panels standing five meters tall, the texture will be 70% at Y = 1 meter. At two meters, the texture will be 50%. At three, it'll be 20%, and so on. Remember how we set the main transparency level to 100%? Well, if the texture (Fractal

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RAPID TURN AROUND!



Figure 1

Noise) is only 70%, 50%, 20%, etc., what do you suppose will replace it? Nothing, and that's the point. The texture fades away to 100% transparency. Neat, huh? Finally, make your Texture Value 50% and your Contrast .75, and hit Use Texture. The last bit for this surface is Edge Transparency. Since we are creating ground fog, which should (we hope) have no sharp edges, we'll turn the Transparent setting on. Set the Edge Threshold to .5. Save this surface as "GroundFog.surf".

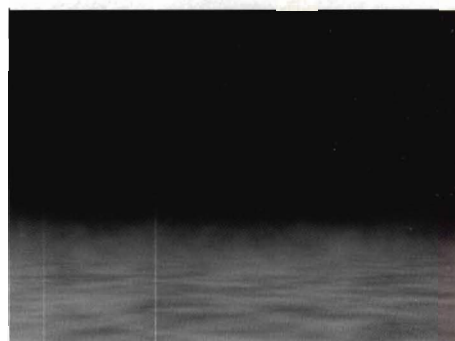


Figure 2

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Now, go to the Ground surface and load "GroundFog.surf". This flat plane sits beneath the fog panels and should have the same fog. The only change we'll make is turning the Edge Transparency back to Normal and setting the master Transparency level at 50%, so we won't see huge, black gaping holes in the "bottom" of the fog, which would quickly reveal the trick involved. Save all your objects.

In Layout, choose to edit the Camera's position. Punch in only the X- and Z-axis buttons on the left side of the panel, then hit Reset. (In case you didn't know, Reset will return whatever axes are unlocked to 0.) Set the camera's Y position to 2 meters, then set the Pitch (via Rotate) to -4.80 (or 5 if you feel rebellious). Create a key for your camera and render a frame. That took a while, didn't it? The unfortunate fact of the matter is that layers upon layers of transparency add up to mucho rendering time. (On my Progressive 33 MHz 040 with 32 MB of RAM, the image in Figure 1 took 7 minutes, 39 seconds at Medium Res, no Antialiasing.)

But wait, we're not done yet. Go back into Layout and select the Effects menu. Here's where we add a bit more texture to the shot. Bet you never thought we would use LightWave's Fog effect to generate ground fog, did you? Turn the Fog Type to Nonlinear 1 and set the Minimum Fog Distance to 15, meaning that there won't be any fog (of the built-in type) within 15 meters of the camera at any time. This frees up that space for the star of your animation, and also gives a nicer visual effect. Set the Maximum

Fog to 150, which puts the area where the fog is solid right beyond the edge of our ground plane. Leave Minimum and Maximum Fog Amount at the defaults of 0% and 100%, respectively, and turn Backdrop Fog on. Have another render, or simply take a look at Figure 2. This very noticeable difference added only six seconds, by the way.

The effect improves with more layers. You can easily produce more layers by cloning the GroundFog object (in the Objects panel) one or more times. But that effect doesn't come cheap. Figure 3, with only two GroundFog objects, rendered in about 14 minutes. The real magic happens when you animate the shot, with the "fog" drifting slowly across the ground.

This trick works great for a locked-down camera shot or a tilt, but actually moving through the stuff in the Z direction will cause the planes to become apparent.

Again, you'll want to add more layers. Try dissolving a panel out as the camera approaches it to achieve a dissipating effect. By using different surface names on individual planes, with similar surface settings



Figure 3

but maybe a different shade of color, you can create even more interesting environments.

Want a seriously realistic fog appearance? Create an image sequence of larger fractal noise elements for use in the Background Image Se-

quence. Use Backdrop Fog to tie the distant fog with the near fog. The results can be truly amazing.

As usual, I should point out that the purpose of these tutorials is to give you a place to begin your explorations. Take the concepts presented here and run with them. The same method for creating ground fog could easily be used for steam from a pot of coffee, frosty air from an open freezer door or smoke from a fire. The secret to mastering LightWave 3D is thinking of how to take the things you learn and modify them to suit your situation.

VTU

David Hopkins is the founder of Mach Universe, a Southern California-based animation house.

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DR. TOASTER

Problems, Begone!

Monthly Housecalls for Your Ailing Equipment

by Dan Ahlan



You're reading a brand-new column dedicated to the ups and downs of video production with the Video Toaster. My goal is one you can all appreciate: to ensure your Toaster system stays healthy.

With every issue, "Dr. Toaster" will provide answers to your questions about video and the Video Toaster. And remember, this column can answer your queries about not only Amiga-related products, but also PC products and the new Toaster for Windows. At times, the questions and answers will be simple. Some will be more complex. Whichever the case, I'll do my best to provide you with the most accurate information and advice possible. If you run across a problem or you are simply curious about creating a particular effect, send your questions to me at the addresses below. Remember to explain your situation or problem and provide a complete description of your system configuration. Because I receive quite a bit of e-mail daily, please include a subject header titled DR. TOASTER so I know it's for this column. I certainly wouldn't want to overlook any important messages!

Over the past five years, I can honestly say that the Video Toaster and LightWave 3D have brought me to where I am today. Who knew that by finagling the budget at the cable station where I worked, thereby allowing the station to purchase a Video Toaster, it would snowball into so many great things? Many of the users I've talked with at VTU training classes and through the Internet have similar stories, all stemming from the purchase of a Toaster system. The Toaster took me from one job to another to yet another, and finally to starting my own business. At times, my trusty old Amiga wasn't living up to its "friendly" name, but we've survived the rough times. Now, I can look forward to using my new 4.0 upgrade and moving into the future.

Let's Get Acquainted

Let's start after college, OK? I graduated with a bachelor's degree in broadcast journalism and a minor in photo-journalism. My idea was to be a television producer.

Between my junior and senior years, I interned at CBS in Chicago, and, naturally, planned to land a job there right out of school. Wrong! After college, off I went—not to the third-largest television market in the country, but the 187th in Lafayette, Ind., working for a small CBS affiliate as a video cameraman. It sounds like a cool job, but at \$12,500 a year—I don't think so. After that, I worked as program manager for a cable station in Valparaiso, Ind., where I became familiar with the Video Toaster. Then, I worked for two years as a corporate video producer, also heavily using the Toaster. During this job, Toaster 2.0 was

released, and I found myself becoming more and more intrigued with LightWave. So intrigued that I started a small business on the side, producing graphics and animations (see January 1994's VTU). In those five years, I've learned quite a bit about Toaster production, and I'm ready to share that knowledge with you.

With the introduction out of the way, let's get started with some frequently asked questions (FAQs). I've worked with people from all aspects of the Video Toaster spectrum—from those who ask "A video what?" to those who use one every single day. In all that time, I've witnessed some very common problems, the answers to which are still not widely known. I once knew a salesman who was ready to completely reinstall all of the Toaster software just to correct a bug, when changing one cable would have fixed it. Reinstalling is not always the solution. You should keep in mind a number of steps when problems occur. Work through them and don't panic. Remember that it's all part of the learning process, and believe me, you're always learning.

Often, when you save Framestores, errors will show up in the saved image. Other times, when you're loading Framestores, only half of the image saves, or there are horizontal lines throughout it. Any ideas? Most people think their Toaster board is bad and immediately call NewTek. Most dealers tell you to reinstall the software. Wrong again! When I first got my own Toaster system, this problem happened repeatedly. I sent the system back to the dealer; when it came back supposedly fixed, it really wasn't. This went on for a couple of months. Do you know what the problem was? I had an extension cable hooked to my monitor. I had previously decided to place the Amiga/Toaster off of my desk and had used extension cables. The Amiga dealer who sold me the cables (who's now out of business) told me they were the right ones. Although the pin connection was correct, the cable was made for a different system and a different type of monitor. When I disconnected the extension, the Framestores saved and loaded just fine.

Another reason you may see errors in your Framestores is due to the parallel port. Have you ever gotten a "Toaster Not Responding" error message? It's often due to a device such as a printer or scanner being connected to the parallel port. My scanner is always plugged into my Amiga via the parallel port. Sometimes, when the scanner is not turned on, I'll get the "Toaster Not Responding" message or errors when saving Framestores. This situation doesn't happen too often, but when it does, I know it's because of my parallel device.

Here's another FAQ: "How do I transfer between my Amiga and my PC, and vice versa, without buying a net-

work?" It's very easy to do without any additional purchases. If you have Workbench 2.1, which most of you should, there's a built-in program called CrossDOS. In your Amiga's Workbench software, there's a drawer labeled Storage. Within that drawer, locate the drawer labeled DosDrivers. Inside you should see a small icon labeled PC0. On the Workbench side of things, open the drawer labeled DEVS. Inside, there is also a drawer labeled DosDrivers. Move the PC0 icon from the Storage drawer to the DosDrivers drawer in the DEVS drawer. Now reboot the system. When you insert a disk—and let's pretend it's already Amiga-formatted—you'll see an additional icon accompanying the disk icon. It should read something like PC0:???. What this means is that the PC0 is mounted, but is not formatted as such. By the same token, if your disk was formatted for MS-DOS/PC mode, the DF0 icon would read DF0:???. Now your Amiga is ready for PC disks. Keep in mind, however, whether your Amiga uses high- or low-density disks. Most PCs these days use high-density disks, which, of course, won't read in your Amiga low-density drive. You can also use CrossDOS to format removable media, such as Bernoulli or SyQuest cartridges.

We've got room for one question this month:

Q: I've got an Amiga 4000/Amilink/Personal Animation Recorder system with 18 MB of RAM. I produce corporate videos for my company, and this setup works out very well for us. I'm able to create animations with LightWave and save them directly to my PAR. My problem is trying to incorporate these animations into a production when I edit with Amilink. Until we add a Video Flyer, I'll have to stick with this setup. If I record the animation to tape from the PAR, I'll lose a generation. I am trying to keep as much quality as possible, as this is only an S-VHS system. Help!

Kim Wojtonik
Oakbrook, IL

A: Thanks for the question, Kim. I've experienced this problem in the past. My solution: Don't do any production, just animate! Of course, the folks at your work probably wouldn't like that

very much. Seriously, the way I worked around this situation is probably not the most professional, but it works. Consider jumping between the Amilink edit screen and the PAR interface screen using all keyboard commands (Amiga-M), and play the animation with a keyboard command as well. Make sure that the last animation becomes still at the end, and pick up your editing from that point.

If you really want to do this properly, invest in a General Purpose Interface (GPI) triggering device for your system. The PAR is GPI-triggerable for situations just like this. GPIs are inexpensive, and can be used as an external control for your PAR or anything else that is GPI-controllable. Check the system manuals for installation.

Your system setup should have a black burst signal running into the PAR from either a TBC or black burst generator (an inexpensive one from ESE is under \$200). The PAR output, either S-VHS (if you have a Y/C Plus board) or composite, should be fed into input number one of your Toaster. Toaster inputs two, three and four can have video running through them—time-base corrected, of course. I've seen setups with two Toaster systems, only one having a PAR. (In such configurations, the PAR signal from the other system is run into the editing system. Then, with that third hand, the user leans over and cues the animation on the PAR system.) Most of us, though, have one setup. Two systems linked together is nice, but that sometimes defeats the purpose of a complete "all-in-one video production tool" like the Video Toaster.

That's going to wrap up our first visit. As I mentioned above, e-mail or mail me your questions, problems or comments, and I'll do my best to provide you with complete, concise answers. See you next month!



Dan Ablan is the president of AGA Digital Studios in Chicago, Ill. Contact him on-line at dma@mcs.com, or mail questions to AMG, Attn: Dr. Toaster, 1308 Orleans Drive, Sunnyvale, CA 94089.

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TOASTERPHILES UNITED!

by T. P. McAuliffe

Thousands of video and animation professionals descended on Hollywood recently for the second annual *Video Toaster User Expo*. Held Nov. 1-4, 1995, at the Universal City Hilton and Towers, the Expo was hosted by Avid Media Group (AMG), publisher of *Video Toaster User* magazine (VTU) and *LIGHTWAVE-PRO*, a 3D animation journal. Weeklong activities included NewTek's Developer's Conference, Toaster training seminars and a three-day product exhibition featuring over 30 hardware and software vendors. The event was a huge success for both attendees and exhibitors.

According to Ann Pulley, AMG's marketing/events manager, "Many of our exhibitors reported that they completely sold out of product and exceeded their highest sales goals. Attendees had smiles on their faces and commented that they 'got some really great deals.'"

Some of the show's most exciting announcements were by Amiga Technologies GmbH (AT), which came from Germany for its first exhibition in the U.S. During the first keynote address to a standing-room-only audience, AT President Petro Tyschtschenko discussed his company's detailed plans



Toaster and LightWave users from around the world enjoyed the VTU Expo's bargains, demos and training.



Video junkies stopped by the VTU booth to meet their favorite authors and sign up for subscriptions.

for the future of the Amiga, including the development of a new Power Amiga (to ship by 1997) based on RISC/PowerPC 604 chip technology and the export of the AmigaDOS operating system to other computer platforms. Exporting AmigaDOS to PowerPC and Mac platforms, said Tyschtschenko, opens a wide variety of opportunities for both developers and end users. In addition, new 68060 accelerators are available from various manufacturers, and newer PowerPC boards for older Amigas are expected to ship in the near future.

Tyschtschenko also revealed that AT plans to vigorously pursue the interactive television and international set-top box markets. It was clear to most listeners that the company's new slogan, "Back for the Future," was extremely appropriate. The new owners of the Amiga, both publicly and privately, revealed a serious and well-thought-out

worldwide plan that includes aggressively pursuing both U.S. and international markets. AT's president talked about the increased use of the Internet and World Wide Web for both communication and content delivery in a speech that was informative and punctuated with laughter and applause. And Tyschtschenko unveiled the new Amiga 1200, one of the hottest-selling computers in Europe, and one of the first Amiga 4000 Tower workstations to roll off the U.S. assembly line—both to thunderous applause.

The Amiga booth, jointly sponsored by both AT and U.S. Amiga distributor Service Management Group Inc., featured new A1200s, A4000 Towers and the new M1438S 14-inch multisync color stereo monitor. The booth was configured so that users could try out the computers and sample the wide

system with new, seemingly rock-solid 4.09 software features; LightWave 3D animation software on multiple platforms (including an SGI area courtesy of Xaos Tools); and the soon-to-be-released Video Toaster for PC and Windows, which has undergone significant development since its appearance at the 1995 National Association of Broadcasters convention. Visitors enjoyed working with music clips on the portable digital field recorder and NLE system via a normal home infrared Sony universal remote. Hourly demos of NewTek's various products, given by company experts, were mostly problem-free. Visible on several large video screens, the demos were packed with interested participants.

NewTek Systems Group (NSG), the new strategic alliance between NewTek and DeskStation Technology, was also



Training classes were filled to capacity. They featured dual-projection screens so that students could see both the software interface and the effect of actions on the Toaster's or LightWave's program output.

variety of high-quality software bundled with each one. A NewTek Video Toaster Flyer digital non-linear video editing (NLE) system was also available for testing and evaluation by attendees.

NewTek Delivers

"Welcome back, Jay. I'm damn glad to see ya!" With those words, patting the top of the newly resurrected A4000 Tower, NewTek President Tim Jenison closed the second keynote address. He gave an emotional chronicling of the impassioned creation of the Amiga by its recently departed inventor, Jay Miner. Jenison also spoke of his early work with Miner on the first Video Toaster. More than a few audience members commented afterward that they were "proud to be Amiga/Toaster owners."

NewTek's large display on the convention floor featured something for everyone: the much-anticipated Amiga Toaster 4.0 upgrade; the Flyer editing

represented, enjoying high traffic in a large area containing lightning-fast LightWave 3D animation workstations for attendees' usage.

Several new software, hardware and retail companies attended the NewTek Developer's Conference and Dealer's



Exhibitors reported brisk sales as visitors took advantage of sizeable discounts.



(From left) AT Public Relations Director Gilles Bourdin, AT President Petro Tyschtschenko and SMG's Rick Stine.

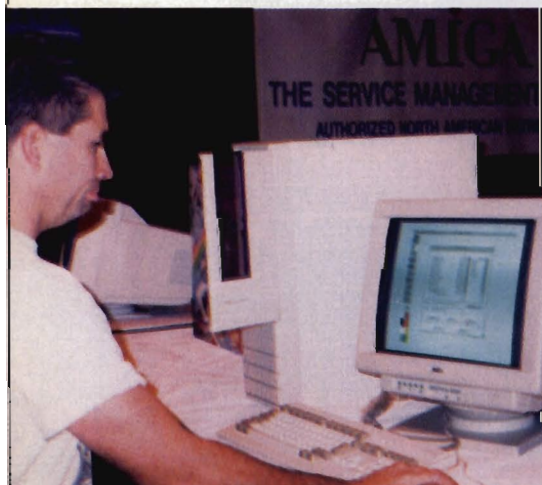


NewTek's towering booth offered demo sites where users could work with the 4.0 versions of the Video Toaster, Toaster Flyer and LightWave 3D, and the new Toaster for Windows. Hourly demos were fun and informative.

Meeting, the third one held in the past year, and joined the growing development program and authorized dealer network. During the conference, Dan Wolf, NewTek's consultant on third-party development and affairs, also announced the release of information and documentation for programming LightWave plug-ins and effects and Toaster/Flyer tools. "With this information, just about anybody can make their own digital video and animation tools," he said. Dealers and distributors from around the world, including Canada, England, Germany, Japan, Korea, and North and South America, met at the Dealer's Meeting, leading to encouraging deals and orders in an apparently robust economic atmosphere.

Sales and Demo Heaven

Over 30 exhibitors (see January 1996's VTU for listings) showcased a wide variety of products with special low pricing. There were many good deals, and users both new and old had their questions answered via hands-on demos and knowledgeable salespeople.



Attendees were able to work with the new Amiga machines and various software packages.

and audio production hardware and software. Additionally, the Los Angeles Video Toaster User Group had a large booth and sponsored the popular Toaster Theater, showing demo reels of Toaster and LightWave productions from around the world. The dynamic organization also held its monthly meeting, with talks and demos from AT Public Relations Director Gilles Bourdin, VTU Editor in Chief Tom Patrick and various manufacturers' representatives.

Toaster Fun!

One of the most entertaining events during the Expo occurred the night cre-

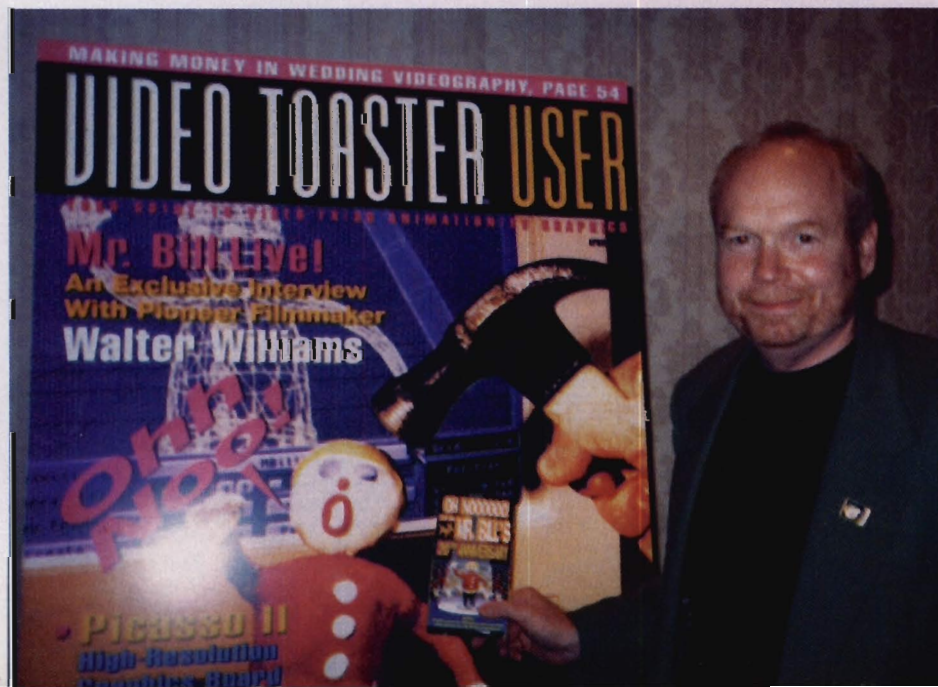


NewTek LightWave Product Manager Brad Peebler and associates discussed the future of the LightWave 3D animation program and other issues at one of the Expo's free Q&A seminars.

Products included computer, digital storage and animation systems; Toaster/Flyer-related editing/production software and digital stock video Flyer clips; LightWave plug-ins, add-ons and training materials; and general video

active genius Walter Williams treated attendees to a world premiere sneak-peek of *Mr. Bill's 20th Anniversary Special*, coming soon to a TV near you! The free Animation Workstation Giveaway, sponsored by Carrera

Walter Williams (below), creator of the popular *Saturday Night Live* character Mr. Bill, proudly displayed the new home video release of *Mr. Bill's 20th Anniversary Special* before an enthusiastic audience.





Bruce Faust of Carrera Computers presented Expo attendee Marilyn DeSilva with a new computer animation system. The Cobra system is a 275 MHz DEC Alpha with 32 MB of memory, a 1GB hard drive, a 4x CD-ROM and the Windows NT version of LightWave 4.0. This family of alpha workstations includes some of the fastest in the world.

Computers, *VTU* and *LIGHTWAVEPRO*, was another exciting event. Each Expo attendee was automatically registered, and Marilyn DeSilva, who owns SeeScape, a graphics company, walked away with a fully outfitted Carrera Cobra DEC Alpha computer with LightWave 3D, valued at over \$9,000. "Now I can do all the projects I've always wanted to. Thank you all very much!" she exclaimed.

The much-visited *VTU/LIGHTWAVEPRO* booth gave away magazines, offered subscriptions and hosted "Ask the Author," featuring popular writers from both publications. The contributors answered readers' questions and, along with *VTU* staff, received input and feedback. AMG announced the release of "The *LIGHTWAVEPRO* Compilation Book" (\$39.95), which includes 100 of the most popular articles from the monthly 3D animation journal, and a CD-ROM filled with tutorial objects, scenes and more. AMG also revealed that an East Coast *VTU* Expo is tentatively planned for late summer!

Attendance at the Video Toaster production, Flyer editing and LightWave animation training classes was standing-room-only—higher than ever, said Pulley. The sessions offered both basic and advanced instruction by carefully selected working professionals, many of them *VTU* authors. "All 24 multilevel classes were packed with video and animation enthusiasts eager to learn from our professional instructors," said Pulley. "Feedback from students was very positive. Many commented that they appreciated our offering both beginning and expert-level courses." (AMG also offers the Toaster University

Across America training tour every summer and training in Hawaii every winter.) Additionally, free Q&A sessions were offered, including "The Future of LightWave 3D" and "The Future of the Video Toaster."

For the Amiga/Toaster industry, which has beaten the odds by fighting its way back from the brink of extinction, the Expo was a welcome and profitable event. With several internationally newsworthy announcements, new and established software/hardware companies bringing innovative products to an eager market, and Amiga/Toaster users hungry for bargains and information, the 1995 *Video Toaster User Expo* was, by all accounts, a fabulous success!

VTU

KEYNOTE SPEAKERS

The following highlights are from the keynote address given by Petro Tyschtschenko, president of Amiga Technologies, on Nov. 1, 1995, at the 1995 Video Toaster User Expo. The full text of the speech is available at VTU's WWW site (<http://www.portal.com/~amg>).

"In August 1994, almost one year before April 21, when ESCOM AG took over the rights of Commodore, Manfred Schmitt, chairman at ESCOM AG, told me, 'Petro, I want the Amiga!' From this day on, I was in charge of setting up the deal that the Amiga community was waiting for: taking over the rights and patents of Commodore International and giving the Amiga a new home.

"It was a very difficult time—the situation with Commodore was complicat-

ed and many companies were interested in getting this baby, too. But our strategy to keep silent about what we did helped us to be faster and more efficient...."

"We have sold our first 20,000 Amiga 1200s in Europe. These were not only sold to our distributors and dealers—all of them went over the shelves to the end users. Our backlog is still 60,000. The demand is more than satisfying. We are happy to see that the Amiga didn't lose its appeal to the customer.

"The success is like [that of] earlier Commodore times. The difference is that now a new management of competence is installed. Motivated people who love and know the Amiga are taking care of the business. Our strength is that we are a dynamic team. We react quickly to new situations. And we've also learned from the mistakes Commodore made.

"Some people over here [in the U.S.] think that ESCOM AG acquired the



AT President Petro Tyschtschenko delivered a keynote address and unveiled the new Amigas.

intellectual property of Commodore just to build a few computers for the Christmas season and leave the market afterward. Ladies and gentlemen, that is neither my style, nor the kind of business I like to do. [The] Amiga is a long-term project; we want to re-establish a market and give the Amiga the position it deserves because we believe that our product is a good alternative to PCs and Macs...."

"The U.S. market is very important for us. Ladies and gentlemen, I want to

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DOLLARS & SENSE

BUDGETING FOR YOUR SMALL BUSINESS

by Chris Fenwick

One day I'm going to write a book that is a compilation of quotations about the video production industry. I've been collecting them for about five years, so maybe in another five I'll have enough to put in a pamphlet. And after 20 years or so, I'll have a real cool quotation collection—the kind of book that people keep in the bathroom. I've always found that the people I have the privilege of working with are some of the most intelligent, quick-witted individuals that I ever run into. Quite often they will come up with some real zingers. Perhaps the one that really sums up this industry best is from Hunter S. Thompson:

"The television business is a cruel and shallow money trench, a long plastic hallway where thieves and pimps run free and weak men die like dogs. BUT you can get free cookies."

What's the point of all this?

Well, this business comes with its good and bad—no one has concocted a way to filter out all the thieves and pimps and to keep all the free cookies. Many people who have been sucked into the lure of easy money or creative self-expression with just one more little black box or accelerator card have come to find out that this is indeed a tough way to make a living.

Ask anyone who knows the TV industry and they've probably heard it described as "an awful, horrible, terrible way to make a living—when it's at its very

best." So what can you do to make the business end of "Television," and its little sister "Video," a kinder, gentler vocation? For starters, you have to work *smart*. Let's take a look at a few of the finer points of figuring out just how much to charge for the type of services Toaster and Flyer owners can offer. Keep in mind that there are as many people out there offering advice as there are people going out of business! I've heard every answer to this age-old question: Some suggest "spying" on the competition by calling on the phone and asking for bids or rate cards. Others will preach a floating rate scale based on the pockets of the client. The best one I've heard recently was in a newsgroup on the Internet. Someone suggested an approach like this: "So what did you have in mind for the animation budget? [Wait for response.] Oh really. Well, that's right about in the ballpark. I'm sure we can work with that."

I'm sorry, but I find this type of reasoning completely preposterous. Since when do the guys at the supermarket ask you how much you would like to pay for a boneless chicken breast? When was the last time the guy at the gas station asked you how much money you had in your pocket? We aren't buying Mexican blankets in Tijuana here! I fully realize that in much of the world there is a tradition of bartering, but we are dealing with a very technical and overhead-demanding industry. If you're careful, there's plenty of money to be made. We don't have to sell our souls to the Render Demons to make a living.

It amazes me that, in a field teeming with digital transfers, binary codes, image manipulation and all sorts of mathematical calculations, most of us tend to pull numbers from the stratosphere when it comes to deciding how much money we charge and thus take home.

Let's take a look at a mathematical way of figuring overhead, the stuff you don't want to admit that you have to pay for. For starters, imagine a small production company based in Anywhere, USA. (Since the IRS is really cracking down on the home office thing, we will put this company in a

tiny business office building.) Now, most people will figure overhead as the cost of the office, but there are many *other* costs involved in accurately figuring your overhead.

| \$ OVERHEAD | |
|----------------|---------------|
| Rent | \$250 |
| Phone Bill | \$100 |
| Pager/Cellular | \$120 |
| Car & Gas | \$300 |
| Health Care | \$300 |
| Advertising | \$100 |
| Total | \$1170 |

Figure 1: A sample expense chart. The real total is often much higher.

The Money

You can start with your rent (Figure 1). If you're working in your home, you should probably figure the total square footage that your spouse or significant other can't use, and multiply that amount by the cost per square foot of your home. Now figure in a phone bill, pager, possibly a cel-

| \$ BIG TICKET | |
|------------------------|---------------|
| Overhead | \$1170 |
| \$10,000/18 | \$556 |
| EFFECTIVE LIFE | |
| Mad Money | \$200 |
| Desired Income | |
| (\$40,000/12) | \$3334 |
| Total per Month | \$5260 |

Figure 2: Once all expenses are accounted for, you can determine your true costs per month.

lular, and some car and gas expenses. (Even if you own a car outright, you should be saving a little each month for your next down payment.) You should also be responsible and figure in the cost of supplying your own health care, unless you have some other way of scoring that benefit. If you're smarter than me, you'll do a little advertising, which will cost you something. The yellow pages require

a monthly payment, as do ads. By adding up all these figures we come up with a number that will allow us to be, and stay, in business. This amount does not give us any equipment to perform our business with, however. That comes next.

You also have to account for all the toys you'll need to make the videos and animations that we hold so near and dear to our hearts. Some of us can go out and buy things with cash; if you're like me, you probably lease the big stuff. We will need to incorporate that payment into the equation.

It's sort of depressing, but if you paid for all your current gear in cash, you should divide the amount you spent by the number of months you realistically think you can make money with it and add that to the equation.

In this high-tech, fast-moving world, I use 18 months as an expected life span for video and computer equipment. Not all hardware or software needs to be retired that quickly, but if you are talking about a computer, let's face it—in a year and a half you're going to want something new. So start planning on upgrading today. For our example, let's assume we have a \$10,000 Toaster system. That's what my first system cost with a TBC, an accelerator and a few other accessories.

You might be wondering, "Why should I set aside money if I already own the equipment?" Here's why: If you run all your gear into the ground and you're just getting by, when the high-tech grim reaper shows up one day to take your edit deck's life away, you will have already saved enough to replace it. You'll be in great shape!

Make sure to put a bit in your budget for "emergency" equipment. That's right, the unexpected microphone or software package you might need. Maybe it's just a couple of hundred bucks a month, but you should plan for it, because some day your equipment will stop working (usually right in the middle of a project), and there will always be new stuff that will help you do a better and faster job. Otherwise, you will never have all the tools you really need to do your job.

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BUILDING THE PERFECT BEAST!

The Hows and Whys of the Toaster

by Harold Russell

[Editor's note: Since its introduction in 1990, the Video Toaster has revolutionized the way people produce broadcast-quality video. At a price that makes "professional" equipment manufacturers cringe, the ideal of a "broadcast studio in a box" was, and still is, a potent force for putting the power of television in the hands of the masses. With the finalization of the Video Toaster Flyer 4.1 non-linear editing system software, VTU thought it would be helpful to take a brief look at the background and rationale behind the Toaster—its engineering, software and functionality.

We could think of no one better suited to the task than

Harold Russell of Utah's Atomic Brand Software, Inc. As one of the first Video Toaster owners and now one of the most prolific third-party developers for the Toaster and Flyer, Russell is in a unique position to comment on the technology: its past, present and future. His production company, Atomic Productions, is one of the most successful in its region, and his software business is also taking off. His booth at the 1995 Video Toaster User Expo was packed from open till close. During the three-day event we spoke about many things relating to the Toaster and Flyer. What follows is Russell's response to our conversation and an interview with the talented entrepreneur.]

What Is the Perfect Beast?

There is no perfect beast! You have to find the system that best serves your needs and budget. If money was no object, we all could have the newest, fastest non-linear system with all the coolest bells and whistles. But I have to justify all the purchases I make, and they must return their value quickly to make it profitable to stay in this business. Since day one, the Toaster has fulfilled two of the most important parts of the justification process: affordability and broadcast quality. I call it (the Video Toaster Flyer) a beast because it evolves, grows and brings joy (sometimes frustration). However, the beast does its job and makes it possible for me to produce top-quality video at a fraction of the cost of any other system!

TBCs and the Video Toaster

NewTek chose to leave out TBCs from the original Toaster for the same reason high-end manufacturers like Grass Valley and Sony did—freedom of choice. BetacamSP, MII and industrial S-VHS all include on-board TBCs. If NewTek added an “affordable” TBC chipset to the Toaster, high-end Toaster users would be forced to over-process the video signal. Betacam users, for example, would be forced to “double TBC” all their material. Most video users will agree that needlessly processing the video signal twice degrades the original video material. A straight (wire) signal with no processing usually provides the best signal. An affordable TBC chipset might actually degrade the Toaster's broadcast signal. The new DVC digital cameras do not need a TBC for use with the Toaster (two VCRs will still need to be in sync). Using a TBC with these cameras will surely degrade the video signal. NewTek gave you the choice to use the quality TBC you could afford; they didn't force you to use an TBC chip set, like many other computer video systems did.

NTSC and the Video Toaster

The Video Toaster and Flyer NLE technology is based entirely on D2 video. D2 video is a composite video signal composed of four field segments that combine to form a full-color frame of video. This signal always makes the display of digitized D2 video from the Toaster two frames or four fields. That's why you get a “jumpy” frame capture

using the Toaster with motion video, and why the Flyer displays and sets video in two-frame increments.

This D2 video data (or signal) can only be displayed easily and inexpensively in two ways: either as an NTSC composite signal or a D2 digital signal. Since NTSC was the broadcast standard at the time of the Toaster's development, NewTek chose this as the way to view and use this high-quality signal.

It's true that using a component (or quasi-component—“Y/C” is still encoded) method of transferring video signals is cleaner than using NTSC. However, NTSC first generation contains very little artifacting, and only after multiple passes of this signal (encoding) does it appear to be a visibly poor signal. Since the Toaster is an NTSC (or D2) device, you should use component or Y/C video signal transfer as much as you can before and after using the Toaster.

Using third-party transcoders (Y/C Plus, DPS, etc.) will help this NTSC

put as clean as possible, it uses an analog/digital combination in its operation.

If the Toaster is never put into digital mode (see your Toaster manual), the system remains in analog mode. This analog mode is used by all (non-digital) high-end switchers and VCRs. Component video, used by BetacamSP, is in an analog mode, and R-Y, R-B and Y/C video is analog. Unless you are using Digital Betacam, D2, D5 or the new DVC/DVC-Pro camcorders, your video is stored and delivered in analog format. Conversion to and from analog-to-digital video induces artifacts and noise. Expensive A-to-D conversion is hard to distinguish; low-end conversion (like some computer video systems) is easily visible.

The Toaster does not force you to use digital conversion on all your source material. If you don't use the Toaster's digital effects while switching or editing, it stays in the analog mode, keeping the signal from further conversion (just like an expensive Grass Valley switcher).

Some desktop systems not only force you to use their TBC's chips, but also force all video material into digital mode, which further degrades and adds artifacts to the signal every time you use it. This is why the Toaster is a true analog and digital solution, outperforming many other systems that may provide a component connection.

The Digital Video Toaster

The Toaster samples and manipulates the D2 video signal in near real time. For a digital video device to work properly, it must be able to sample and adjust an entire video signal (in some way) and then spit the video data back out quickly. Presently, the Amiga/Toaster combination is not fast enough to manipulate a full field of video and output it in real time, so it manipulates the signal a scan line at a time.

Using this scan-line method and the basic limitation of the D2 video signal itself, the Toaster can only make real-time horizontal changes to the incoming video signal. All other changes are made in “quads,” or groups of four pixel chunks, causing certain Toaster DVE transition moves to appear to contain artifacts. But using these DVE moves at the preset (fast) speeds, you can mask most artifacts from the viewer. DVE moves that are based on full (or partial) horizontal movements do not contain any artifacting because the



device shine. NewTek will provide a Y/C- and D2-compatible system in the new “Blue Box” (or portable PC Toaster) so all future Toaster connections can avoid these NTSC limitations. However, note that the NTSC output of the Toaster still exceeds some (most) of the desktop solutions, offering built-in TBCs and component inputs.

NewTek knew that someday we all would use digital video for acquiring source material, storing video data, and editing and transferring of video signals. That's why they developed a D2-compatible system that we could use today and well into the future.

The Analog Video Toaster

The Video Toaster was designed to be a “live” video switcher and an editing solution. Many producers and TV stations use the Toaster to switch live cameras during broadcasts and in the editing suite. To keep the Toaster's out-

Toaster is fast enough to display these moves without using any visual quads.

Shifting the Toaster into digital mode also causes a delay between the input signal and the outgoing video. This delay (400 ns) is caused by the time it takes to manipulate all those scan lines and output the results. Most Toaster users are aware of how to avoid this delay during editing—read your manual!

All artifacts of the digital delay can be avoided by rendering your digital effects. Using Visual FX, Hollywood FX and/or the new PC Video Toaster's rendered effects will alleviate any artifacts you may encounter. If NewTek had included the hardware necessary to not use quad chunks in DVEs, more than half of the market that uses the system would not be able to afford the Toaster.

The Shadow of Luminance Keys

The same delay used by the Toaster to create DVEs is also applied to luminance keys. Again, because of the great speed necessary to key over live video and display the actual key, the Toaster also has a slight delay when keying in the luminance mode. This delay appears as a "shadow" on all luminance keys. If you must use luminance keys, be prepared to mask this shadow or use it to your advantage in your video productions. Again, if NewTek had included the speed to key without a delay, most of us would not be able to afford a basic Toaster system. Use Alpha keys (created out of the CG) whenever possible!

VTASC and the Flyer

VTASC (Video Toaster Adaptive Statistical Coding) is a proprietary video compression format developed by NewTek exclusively for video. JPEG and MPEG compression schemes were developed for still-frame images or pictures. VTASC was created from the ground up in the 1990s for the D2 video and audio signal. JPEG first surfaced in the 1950s for compressing maps and aerial photos for the military. VTASC first surfaced in 1994 in two modes: standard and extended.

VTASC is a unique compression system that provides for a D2 stream of video data plus two channels of 16-bit stereo audio. This configuration allows the audio to always be present and in sync with the video (just like a VCR). Having the audio and video as one file also makes moving and copying clips easy. Most JPEG systems always record the audio separately, leading to prob-

lems with out-of-sync audio. Some systems still have this problem.

It might be easier to picture VTASC as a stream of 1's and 0's, like water going through a hose. You have access to the video stream of data every four fields or two frames and access to the audio data with every frame. JPEG can be thought of as separate image files that are loaded and displayed. To manipulate JPEG, most systems must convert and process the JPEG data stream like RGB files. Soon, VTASC will be completely manipulable by numbers conversion, allowing for many new development opportunities.

Flyer Resolution

The VTASC compression format has the capability of true D2-quality video: 752 pixels by 480 scan lines, >6.00 MHz at -3dB bandwidth at >56dB signal-to-noise ratio. The digital video signal is the same as D2: 8 bits at 14.3 MHz. Like TVs and cameras, the Toaster/Flyer produces rectangular pixels. Mac-based systems produce only square pixels at 640x480 scan lines. Square pixels are great for print applications but don't fit the video screen properly. If the difference between 640x480 (Mac-based) and 752x480 (Amiga-based) pixels does not seem like much, in actual resolution the latter is over 100-pixels-per-scan line higher!



Atomic's software provides easy-to-understand interfaces for traditional video editors.

Audio and the Flyer

The Flyer system can output eight 16-bit audio channels. The Flyer (releases 4.07 to 4.09 at press time) uses stereo pairs for its mixing and output of this audio. Each video clip (video segment) can contain two channels of this 16-bit audio, making for one stereo pair. The other video channel (or "B" roll clip) can also play back a stereo pair; this would be considered a second stereo pair. The audio coming from the other Flyer audio hard drive can be up to two stereo pairs; let's call these

stereo pairs three and four. All these stereo pairs add up to eight 16-bit audio tracks. In releases 4.07 to 4.09, they are married as stereo pairs, though it is easy to unmarry these pairs using the pan and volume commands within the Flyer software.

The Flyer hardware includes a DSP chip, which controls audio volume and the fade-up and fade-out of these eight tracks. Although the current Flyer software is great for basic audio editing, enhancements to this software and the DSP chip can really make the Flyer a super audio-for-video sweetening system. Expect to see these items in the very near future.

At the two developer's conferences held recently, NewTek released all of the programming docs for its DSP chip. Any smart third-party developer can design special software that enhances and builds upon NewTek's current effort. We could soon see volume envelopes, reverbs, delays, flanges and other signal-processing applications as well as completely new audio interfacing programs for the Flyer.

Major Flyer Enhancements

It may appear that the rumored demise of the Amiga scared away all major third-party developers from the Toaster/Flyer, but this is simply not true! Yes, we have lost some key players, but outside developments continue at a slow, steady pace. Some manufacturers are simply waiting for the 4.1 release of the Flyer. Let's take a quick look at some of what is still available and in development from third parties.

Image processing: ASDG turned into Elastic Reality and left the Amiga market—or did they? NewTek now uses built-in image conversion routines (HIIP) created by Elastic Reality in every 4.xx release.

ImageFX, now the premier image-processing system, has just released a new, faster and more powerful system that is completely compatible with the Video Toaster and the Flyer. If you don't have ImageFX, you are missing out on video clip loaders, blue screen and green screen operations for the Flyer, and one of the fastest image-processing and paint systems you can own.

ToasterPaint and wipe enhancements: Dimension Technologies has put the final touches on Composite Studio Pro. This program makes easy, beautiful title pages, backdrops and animations right out of ToasterPaint. Wipe Studio helps you create and manipulate Toaster/Flyer

wipes and DVEs. There's also Alpha Paint and Pro Wipes.

Flyer enhancements: Besides Atomic's products—Flite Gear, Radar, FlitePOD, FliteVTR and Spot (which add time-line interface, VTR control, batch digitizing/restore project operations, automated project building and television commercial insertion)—several high-powered utilities are already available for your Flyer productions.

Control Tower (I consider this a must-have) gives you powerful batch-processing operations, Flyer clip-building and manipulation, and a unique connection between the Flyer and ImageFX software. For example, if you need to create a super-long dissolve between two already recorded clips without wasting valuable hard drive space, Control Tower can build them for you. Too cool!

Navigator, new software from Token Productions provides automated project building and crouton manipulation tools (similar to Flite Gear) and a neat utility for grabbing frames and making stills, which I find invaluable. Dan Wolf of MegageM (who works with me on FlitePOD) also has a few new tricks up his sleeve.

Editing control:RGB, maker of Amilink, is hard at work making a 4.01-compatible editing system that should mix linear and non-linear editing. Eric Klosky of FutureVideo has just released a new, powerful version of that company's VStation software for the Toaster. (Eric is also working with me on FliteVTR.) Nucleus, maker of Personal Single Frame Controller and Personal Editor, is also working on a linear-non-linear timeline editing system. TAO is rumored to be working on an upgrade.

Toaster third-party development has always been key to the power of the platform, and it will continue as long as there are Video Toasters and Flyers. Remember DPS' TBCs 1 through 4 that were developed for the Toaster? What about all the PAR cards sold? Although DPS has moved on to the PC, consider where these products would be without the Video Toaster.

Numbers, Users and the Flyer

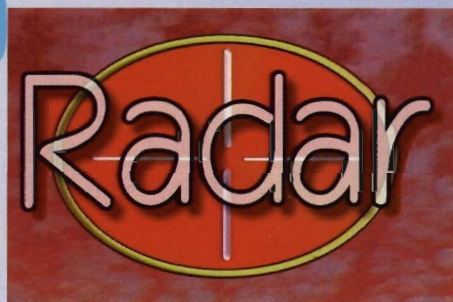
It is rumored that over 30,000 Toasters are in use, with many more thousands of users who know how to operate them. This makes the Toaster the largest-selling, most-widely used video production system in history. There are thousands of Flyers editing video directly from

hard drives. With these kind of numbers, we are the majority, so make the best of your situation!

In the near future, I will discuss caging this beast by building a facility around the Toaster and Flyer. At Atomic Productions, we are building the first "world class" post-production facility based around the Flyer and LightWave 3D.

VTU

An Interview With Harold Russell of Atomic Brand Software



Radar, Atomic's new offering, adds timeline interfacing to the Flyer's storyboard.



Radar's interface shows you visual and time placement for all Flyer elements.

When did you see your first Video Toaster?

I had my longtime production business and visited a small booth at NAB in 1989, where they were showing a new software program called LightWave 3D. Some months passed and I got a call from Topeka, Kan. After seeing my demo reel, NewTek wanted to know if I would be interested in picking up one of these Video Toasters. Obviously, I said yes. A week later this box shows up at my house, and lo and behold, inside there's a Toaster hardware card (board #42), some software, hardly any docs and a note that basically said "Enjoy, and let us know what you think!" So I got this board into my

Amiga, and Voilà—I was instantly and totally blown away. I was doing effects, wipes, dissolves and titles. Cool. And the quality was impressive, so I hooked it up to my waveform monitor and vectorscope and expected to see a ton of noise. I saw none. I was further impressed. Though I'd fooled with other packages in the past, with the Toaster I thought, "Now we're talkin'!"

After awhile I started to panic a bit. I thought to myself, "Hey, if people buy these Video Toasters, what are they gonna need me and my production company for?" So I became a Toaster dealer. I'm not pro-nuke or anything, but one of the only things I could think of that had revolutionized our world the way I knew the Toaster and digital video would was the discovery and harnessing of the atom. Thus Atomic Toaster was born. I decided to come out with a catalog that would take everything necessary for anybody to get started and put it all in one book. Our free Atomic Toaster catalog, kind of like the Whole Earth one, was very well-received. Our business plan called for selling 30 Toasters that first year. We sold 150!

Let's jump 10 years into the future to the creation of Atomic Brand Software. We know about your production background, but have you also been a programmer? How did you get into writing software for the Video Toaster and the Flyer?

I wrote software for the Toaster purely out of need. Obviously the Toaster was a fabulous device but there were also many third-party products out there that were very useful. So I had the idea of taking all these products and putting them into one package, making the Toaster that much more attractive to everyone. I picked up an ARExx book about two years ago, just to build a feel tool to make things go more smoothly in my edit suite. I went down to the local Amiga dealer, bought a book and started reading. Early programming was hell, as it was mostly hunt-and-guess. Our first product was Crouton Tools, which was licensed to another company. Our new product, Flite Gear, has all of Crouton Tools' features and more!

How have things been going for you and other third-party developers?

It's been rough, but things are slow, steady and improving. I see this situation

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WaveFilter

Image Filter Plug-in for LightWave 4.0

by Erik Flom

If you've never followed the old "good things sometimes come in small packages" rule, here's a product that may just make you a believer. Pick up WaveFilter 1.0—a plug-in suite of LightWave 4.0 image filters from Unlimited Potential, Inc.—and your first thought is likely to be, "What's this bonus gift included with the software?" The entire product comes shipped in a small plastic jewel case, no bigger than a couple of floppies, yet there are some powerful effects packed into this deceptively small package.

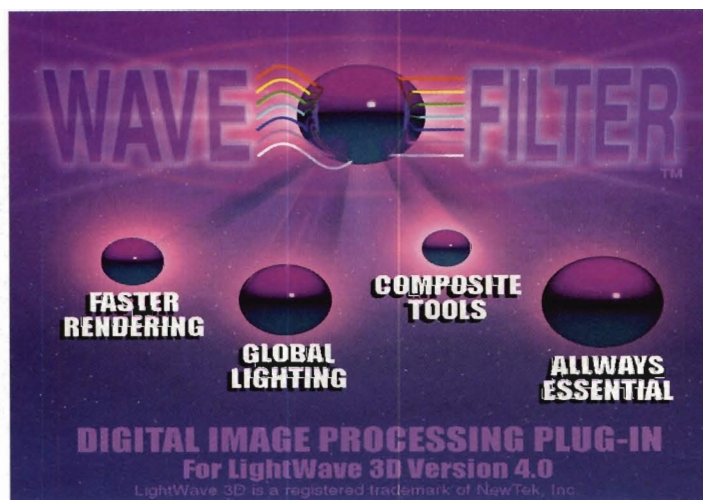
Along with standard features like brightness and color correction, WaveFilter offers several effects that are just not possible with standard, two-dimensional image-processing programs on the PC (e.g., Photoshop), including Depth-of-Field blur and automatic isolation of rendered objects from background plates.

Using LightWave's batch-processing abilities, WaveFilter can automate tasks that previously needed to be done manually in a paint program, including blue-screen and clip-mask creation. And, since LightWave allows you to apply WaveFilter up to four different times in one pass, a wide variety of effects is possible in a short amount of time. Indeed, since the effects can be applied selectively to the background, objects or full screen, it becomes possible to do many effects in-camera, eliminating the need for later passes through 2D image-processing programs.

WaveFilter is shipped on a single floppy disk with a registration card and a Lilliputian manual. The software is currently available only for the PC; plans call for porting it to other platforms in the future. Installation is as simple as any other Windows program. Put the disk in your drive, run Setup, quit Setup and run LightWave. (All you supply is the path to your Content Directory.) Once installed, you'll find four identical files in your Plugins/Layout directory called wavefilter1.p, wavefilter2.p, etc. They're all the same files—the four copies just allow for different settings within the LightWave 3D software.

One of the first of a new wave of third-party add-ons, WaveFilter uses LightWave 4.0's new plug-in technology to almost become part of the program. WaveFilter, like the Pennello Lite plug-in from Xaos Tools bundled with LightWave 4.0, can be accessed from the Image Filter Plug-in panel in the Effects window.

Image Filter Plug-ins, by design, are applied to the final rendered image. As mentioned above, the basic functions of WaveFilter include Brightness (overall and separate RGB values), Contrast and Gamma correction. Other special effects include NTSC Limit, B&W, Negative, Flip Vertical or Flip Horizontal (but not both), Luminance Key Prep (for keying objects) and Key Filters (for creating black or white holes in place of objects or



Unlimited Potential's dynamic new product can be ordered by calling (913) 685-2701. At press time, a 1.1 version—free to all registered users—was due to ship in January.

color ranges in the image). Negative Alpha will invert the Alpha channel, while Range Alpha will generate a clip mask based on two RGB limits (useful for blue-screen work).

Enhance and Antialias are two complementary features. As you would guess, Enhance acts to sharpen color transitions, while Antialias seeks to eliminate the jagged edges caused by sharp color contrasts. As the ads claim, it is possible to save some time using WaveFilter's Antialias. You should note, however, that LightWave actually oversamples data when antialiasing, while WaveFilter applies a custom blur algorithm to the existing image. (So, if you eliminate all oversampling, you'll start to notice flickering and shimmering on detailed textures, regardless of how much WaveFilter tries to antialias.) Some might argue that you could achieve the same effect by using the Soft Filter button in LightWave 4.0. This is not true, since Soft Filter is applied to the entire image, while WaveFilter's Antialias is only applied to high contrasts (similar to LightWave's antialiasing).

Blur is sort of like Antialias on steroids. Like Antialias, Blur softens the image. However, Blur is not discriminating—it will soften the entire area chosen, not just edges. As with Soft Filter, the result is a nice softening of the image. The benefit of Blur is that the amount of softness can be adjusted as necessary.

All controls (except for Antialias, Threshold and Focal Point) conform to LightWave's standard 0 percent to 100 percent range, though these values can be exceeded for sometimes interesting results. RGB values are input using the standard Windows color picker interface.

Though many of these image-processing capabilities are

duplicated in standard paint packages, few programs offer batch processing like that found in LightWave. The power to process thousands of frames automatically is enough to make this product worthwhile. But there are a couple of other benefits from using the LightWave plug-in structure that shouldn't be overlooked.

Unlike a 2D image-processing program, a plug-in has access to several other dimensions of data related to each pixel in the image. Beyond just color, it is possible to examine the Alpha channel and Z-buffer data for each pixel. Using Alpha channel data, it's possible to automatically apply filters to the entire frame, just objects, or just the background image alone. Z-Buffer data is information about how far a given pixel is from the camera. It's possible to use this data to blur objects based upon their distance, effectively simulating depth of field (with an amazing savings in time!).

It is this plug-in's Depth-of-Field (DOF) feature that I find so intriguing. LightWave has simulated DOF since version 3.0 by using a technique of re-rendering the image from a number of camera angles and compositing them. To work, DOF requires at least nine separate images, and at that level there is a characteristic grainy/posterized look on objects that become too fuzzy. Even at the highest level (17 passes), there can be noticeable artifacting on the fuzziest objects. The effects (at high antialiasing) are often quite stunning, but the increased time to render each frame makes this feature prohibitive for anything but stills or short animations.

WaveFilter takes a different approach, which, while not truly accurate, is pretty effective. Refer to the accompanying screen shots of the standard BENCHMARK test dof.lws. Figure 1 was rendered using the default settings, while Figure 2 was done using WaveFilter's DOF function. The insets show a close-up of the letter F in Fuzzy—notice the difference in the aliasing errors that each method brings. LightWave's DOF has a certain grainy quality, while WaveFilter's DOF seems too sharp around the edges and looks to be more blurry along the X-axis. (This supposedly has to do with the scanline-oriented processing of the plug-in. Hopefully, future revisions of WaveFilter will have a more uniform blur.) Still, the quality is quite respectable. And the savings in time is remarkable! The WaveFilter DOF algo-



Figure 1: LightWave 4.0's dof.lws Benchmark scene rendered using default settings at 640x480 (square pixel) resolution. Rendering time was 5 minutes, 20 seconds on a 133 MHz Pentium.



Figure 2: The same scene rendered using WaveFilter. The following settings were changed: Low Antialiasing Threshold = 31, WaveFilter DOF plug-in run twice at 50%, WaveFilter Antialiasing run twice at 50%. Rendering time was 1 minute, 14 seconds.



WaveFilter's control panel.

rithm does seem to have a problem blurring the ground plane properly, but careful design of the initial scene could probably help make these problems less noticeable.

A number of small bugs do detract from WaveFilter's overall performance, but they don't cripple this first-generation plug-in. The review copy was the 1.0 release. By the time this article hits the stands, a new version, sporting bug fixes and several enhancements, should be shipping. (Owners of version 1.0

should search for Unlimited Potential's World Wide Web home page. At press time, the company was in the process of generating one, but the exact address hadn't been resolved. If a patch isn't available, contact Unlimited at the number on page 52.) None of the bugs I found caused LightWave to crash, but a few were annoying enough to make note of. (Keep in mind that even though LightWave is up to version 4.0, the plug-in technology is still in its infancy. As plug-ins become more mature, we'll be able to look forward to all manner of improvements.)

Probably the most annoying limitation is that the settings are not saved as part of the scene file. During the VTU Expo, the author of WaveFilter claimed that a solution is "in the works" and should be available by the time you read this. As an interim solution, there is a load-and-save option in the WaveFilter dialog box. It's possible to save common configurations and load them whenever necessary. Though you still have to set each Option panel manually, at least all the parameters can be saved for later use. Unfortunately, since the settings have to be set for each scene loaded, you can't use WaveFilter 1.0 with ScreamerNet. However, as mentioned above, these problems should be resolved shortly.

The manual is a bit sparse—just 3-1/2-inches on a side and 1/8-inch thick. I lost it at least twice while doing this review! Fortunately, most of the controls are fairly straightforward and don't need too much explanation. While I have to applaud Unlimited Potential for its conservative and "earth-friendly" mini-package, something a little larger, like a CD-ROM jewel case, would stack a little better and allow for a slightly larger manual. In all, WaveFilter seems a very stable filter utility that offers a number of cool, time-saving features. Its image-processing features are a great addition to LightWave, providing batch-correction options found in few programs. The software's unique effects, like Depth-of-Field and Blur, are simply not reproducible in other programs, and can help cut rendering times dramatically.



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Toaster CD-ROM Drives

In Search of Speed and Storage

by Daniel J. Barrett

CD-ROMs, one of the most convenient ways to maintain a huge library of high-quality image and video data, are becoming increasingly popular. Numerous CD-ROM collections of images, textures, 3D objects and fonts are available from Amiga Library Services, Almathera and Stefan Ossowski, not to mention hundreds of PC- and Macintosh-oriented vendors (see "CD-ROM Parade" in January 1996's *VTU*). Creating your own CD-ROMs as a way of archiving huge graphics and sound files has become relatively cost-effective, and drives are fairly cheap and getting faster all the time. Budget-conscious videographers can find used, name-brand SCSI CD-ROM drives for under \$100. So if you haven't added a CD-ROM drive to your Toaster system yet, now is a good time. Especially since the Video Toaster 4.0 CD is full of great images and files.

Before you can enter the world of CD-ROMs, you will need both a CD-ROM drive and a CD-ROM file system. Choosing a drive is not difficult, since the newer models from most name-brand manufacturers (NEC, Toshiba, etc.) work fine on the Amiga. CD-ROM file systems, however, are more mysterious, and you can spend valuable time determining which one is best. Here's an overview of the three major CD-ROM file systems to help you choose the one that best suits your needs.

What Is a CD-ROM File System?

A CD-ROM file system is a piece of software that works invisibly in the background, letting you access data on a CD-ROM drive just like any other floppy or hard drive in your system. Without it, a disc is just a useless piece of plastic.

There are three major CD-ROM file systems in popular use today: CDFileSystem, supplied free with AmigaDOS 3.1; AmiCDROM, a freeware file system by Frank Munkert; and AsimCDFFS, a commercial product from Asimware Innovations. Each of these packages has a different set of features and significant strengths and weaknesses. Xetec's CDX and Canadian Prototype Replicas' CD-ROM-FS are usable but rather old; Ralph Babel's BabelCDROMFS and Elaborate Bytes' CacheCDFFS are popular in Europe.



A sample image from the CD-ROM 3D Arena, produced by Almathera.

Choosing a File System

Strange as it might seem, you should choose a CD-ROM file system before buying a CD-ROM drive. You see, some drives aren't supported by certain file systems, and you want to make sure to get a combination that works. In addition, if you have large storage needs and want a multidisc CD-ROM changer, you'll want a file system that provides good support for this type of operation. AmiCDROM and AsimCDFFS both come with a list of CD-ROM drives and SCSI host adapters that are known to work with the file system. (AsimCDFFS also supports IDE CD-ROM drives—see sidebar chart.)

CDs come in several different formats, and you'll want to choose a file system that will be able to read the discs you need. Most discs for the Amiga and PC are in a format called ISO-9660, and all Amiga CD-ROM file systems read and understand this format. Macintoshes, on the other hand, often use a disc format called HFS (Hierarchical File System); not all CD-ROM file systems can read it. Kodak PhotoCDs are also of great use to videographers. Some CD-ROM file systems can read the image data from these discs, but the user interface for doing so varies greatly. Finally, there are good old audio CDs. All of the CD-ROM file systems will permit your CD-ROM drive to play audio CDs, though some file systems require additional software.

CD-ROM TESTS AND INFO

| | CDFileSystem | AmiCDROM | AsimCDFs |
|----------------------------------|----------------------|-----------------|----------------------|
| VERSION | 40.11 (9 Nov 93) | 1.15 (3 Nov 94) | 3.0 (13 Jun 95) |
| MANUFACTURER | Commodore | Frank Munkert | Asimware Innovations |
| LIST PRICE | Incl. w/AmigaDOS 3.1 | Free | \$79 |
| INSTALLATION | Drag icons [1] | Installer | Installer |
| DOCUMENTATION | None | AmigaGuide | Printed manual |
| READ FORMATS: | | | |
| High Sierra | ? [2] | yes | yes |
| ISO 9660 | yes | yes | yes |
| Rockridge | yes | yes | yes |
| Mac HFS | no | yes | yes |
| Photo CD | no | yes | yes [3] |
| Audio CDs | yes | yes | yes [3] |
| Multisession | ? [2] | yes | yes |
| OTHER FEATURES: | | | |
| Change features while running? | no | yes | yes |
| Caching? | no | no | yes |
| Audio CD player | no [4] | no [4] | AsimTunes |
| Reads digital audio data? | no | no | yes [5] |
| Support multi-disc drives? | [2] | yes | yes |
| ARexx port | no | no | yes [6] |
| Disc emulation | no | yes | yes |
| CDTV emulation | no | no | yes |
| CD32 emulation | no | no | yes |
| Free disc? | no | no | FishMarket |
| List of supported CD-ROM drives? | no | yes | yes |
| Comes with source code? | no | yes | no |
| SPEED TESTS (MINUTES:SECONDS) | | | |
| Read 2.3 MB file | 0:16 | 0:16 | 0:17 |
| Scan disc [7] | 1:54 | 1:54 | 0:43 |

NOTES:

- [1] Installation bug is described in the text.
- [2] CDFileSystem is poorly documented, so some information is missing.
- [3] Automatically creates Workbench icons for this data.
- [4] Can be used with freely distributable audio CD player software, such as Franz-Josef Reichert's JukeBox (shareware, \$20).
- [5] Can read digital audio directly from a CD, but only if your CD-ROM drive supports this feature.
- [6] AsimTunes and DiscChanger have ARexx ports.
- [7] Did a "DIR ALL" listing of over 9,000 files.

There are other issues you may want to consider. If you want to create and record your own discs, you'll want a file system that supports disc emulation, so you can treat an area of your

hard drive like a CD-ROM. If you want to control your CD-ROM drive from other software (say, to synchronize a music CD to a video presentation), you'll want ARexx support. The accom-

panying table lists important features of the three file systems and compares the products for speed when reading a 2.3 MB image file and listing the contents of a 9,000-file disc. The tests were performed on a 25 MHz A3000T with a single-speed Toshiba 3301 CD-ROM drive.



AsimCDFs 3.0 from Asimware Innovations (905-578-4916) offers a Preferences interface that's both fast and functional, allowing changes on the fly.

CD File Systems

Commodore's CDFileSystem debuted with AmigaDOS 3.1. This program is almost completely undocumented, except for a one-sentence blurb in the DOS 3.1 manual. However, Amiga Technologies has said that increased CD-ROM support is a short-term goal. To enable CD-ROM access, look in the SYS:Storage/DOSDrivers drawer and edit the CD0 icon tooltypes. (The Device tooltype should be your SCSI device name—usually "scsi.device"—and the Unit tooltype should be your CD-ROM drive's SCSI ID number. Most drives have an ID changer button on the back.) Put a disc in your CD-ROM drive, double-click on the icon, and a CD-ROM icon should appear on the Workbench a few seconds later. For automatic CD-ROM access each time you boot up, drag the CD0 icon into your WBStartup



AsimTunes allows you to play regular audio CDs from a supported CD-ROM drive.

drawer. (Normally, you should put device icons in your DEVS:DOSDrivers drawer, but this does not apply to CDFileSystem due to an AmigaDOS 3.1 bug that may be addressed in the newer version.) The early version of CDFileSystem is admittedly very basic. It reads only ISO-9660 discs, has no significant options to set, and doesn't come with any other CD-ROM-related software.

continued on page 59

Batch This!

Toasterizing Slides and Prints

by Michael McBride

Part of my job as communications specialist for the Caldor Corporation involves producing slides from the advertising department's QuarkXPress files. If you're not familiar with Quark, don't worry—it's not a program used by many video/graphic production companies. Quark is mainly used to lay out pages for publication, and in our example, the company's weekly sales flyers. Recently, we committed to cutting the rising cost of traditional slide production. Our solution: the Video Toaster!

Caldor, a large retail chain with over 200 stores, was spending tens of thousands of dollars each year on slides. These slides would normally get used once, and then either be archived or, more likely, discarded. Fortunately, my predecessor had successfully argued the merits of purchasing a Video Toaster, so I had all the tools I needed. I set out to convert the corporation from traditional slide production to computer-generated slides, which I could output from the Toaster during monthly meetings.

Different Faces

The first challenge was receiving the advertising department's files in a format that I could convert into IFFs. Because the Amiga doesn't read Quark files, I asked that they be first saved as PICT files, which can be read and manipulated in Art Department Professional (ADPro). (This is a good time to mention that I use both ImageFX and ADPro heavily in my day-to-day work. I actually use ImageFX (IFX) the most, but when our little dilemma occurred, I didn't own IFX, and therefore, despite the steep learning curve associated with FRED—ADPro's batch processor—I developed this system using ADPro, which I know many of you still use. Even though I find IFX superior to ADPro, I've never sat down and redesigned the system for it because of the time involved.) *[Editor's note: See December 1995 VTU's "ARexx-a-phobia" for*



These images (computer-generated for print via QuarkXPress) were initially too large for video. As shown, they are scaled and composited to a 752x480 black background, which fits the required aspect ratio, allowing them to be displayed using the Video Toaster.

more on reconfiguring ImageFX.]

Now, I'm not talking about a few slides, or even a few dozen, but about 50 to 80 slides per month, not including the bi-yearly meetings that add a few hundred more. Over 1,000 video slides have to be produced in

the course of a year. I had to develop a method for automating and batch processing the production of these images as much as possible. The advertising department gave me their images on SyQuest cartridges, which had to be formatted for the Macintosh out of necessity. Fortunately, I had a Mac Emplant board for emulation in my A4000, or the whole shee-bang might of come to a screaming halt right there!

I used the Emplant's conversion software to move the images from the SyQuest onto my Amiga's hard drive. (Note: I've since switched over to a marvelous little program called MaxDos2 from Media4 Productions. If you're trying to integrate a Macintosh into your system, and you don't have MaxDos2, shame on you! Run right out and buy it. It's inexpensive, and money well spent. MaxDos2 can read Macintosh-formatted hard drives and floppies, and move the Mac files over to an Amiga-formatted partition quickly, without the need for a dedicated hard drive or hard drive partition. And unlike the Emplant, MaxDos2 is totally software-based. It can be initiated automatically upon start-up, and it runs in the background.)

Stretching It a Bit

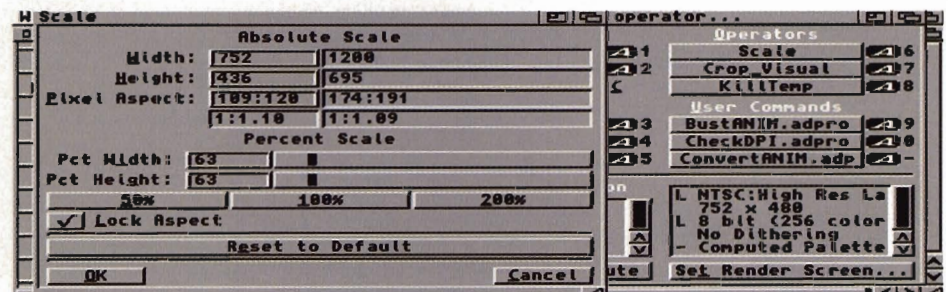
First, I created a drawer inside of my Framestore directory and called it "Composites." I copied the individual PICT files (using MaxDos2) to this drawer. Now that I had the PICT files on my hard drive, it was time to batch-process. That's where I encountered the next challenge. The images were all different sizes, and naturally, none of them were 752x480, the size the Toaster requires. Some were well over the horizontal limit and very slender on the vertical (e.g., 900x200.) Others were huge in the reverse. And still others violated the size restrictions entirely, measuring nearly 1200x850. They were sized appropriately for print advertising, but not for video slides. Stretching and shrinking the images would distort them. The answer lay in ADPro's compositor. Here's what to do:

Use the freeze function on the Toaster's Switcher interface and grab pure black (0, 0, 0) into the DV1

buffer. Load this black value into TPaint using the Grab DV1 tool under the Preferences menu, and save it as an RGB file to the Composites drawer. Call it something like "BlackBkgrnd.iff." This image is the 752x480 background onto which the others will be composited.

Next, open ADPro and use the Universal loader to load each of the images one at a time. Once an image is loaded, the Operator buttons become unghosted. Click on Scale, opening the Scale window. (If scale is not present, open the Operator List found under the Operators menu and open it from there.) Select Aspect Lock and drag one of the Percent Scale sliders to the left. You'll notice that when Aspect Lock is selected, both sliders move in unison, maintaining the

screen with only the word "FRED" in the upper left-hand corner. Fear not—there are four menus in the upper left-hand corner of the interface. Access them in the same manner you would any other menu. Under the Project menu, drag the mouse down to New and release. This opens a new Project window and also replaces three of the menus. Under the Edit menu, select Insert/Images, which opens a window where you can search for the Composites drawer. (You could also select Insert/Range or Insert/Directory, instead of Insert/Range, if you prefer.) Once there, select the images that are of the same, or similar, size and click OK. Upon loading, FRED will represent each image with a black rectangle. If you want, FRED can create a thumbnail image in place of this square. (I don't use it because it slows down the



Note that the Lock Aspect gadget is selected. This is very important for maintaining the image's original aspect ratio during the scaling process.

proper aspect ratio. This ratio is very important if you want your scaled images to look identical to the originals (only smaller, of course). Continue dragging the Percent Scale sliders until both the width and height fall within the 752x480 (width x height) ratio. Note the new size of each image in some way that will later help you identify the file by size. Do not save the file at this time. It would take too long to scale each image individually. The idea is to create batches that you can scale simultaneously. It's likely that you'll find many files of the same size. By identifying these common sizes first, you'll be able to perform most of the operations that follow in batches.

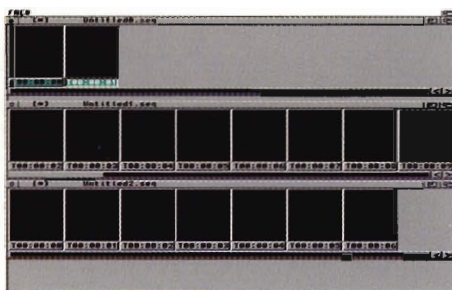
Once this procedure is completed, enter FRED and leave ADPro running, since FRED requires ADPro to function. FRED can be intimidating, partly because it opens to a blank

process, and requires too much memory.)

Next, under the Edit menu, drag the pointer down to Select All and release. You'll see the black rectangles change color, indicating that they are selected and ready to be operated on. Under the Scripts menu, select Process. This opens the Invoke ADPro window, where you will build the script of ARexx programs to run on your selected images. (Don't be intimidated by the words Script and ARexx. This process is simple and very straightforward.)

Click Add, which opens the Scripts To Perform On Each Image window. (Why ASDG didn't just call it Scripts I'll never know.) If you're at all familiar with ADPro, the contents of this window shouldn't surprise you. Inside you'll find drawers marked Operators, Renderers, Savers and Functions. Click Operators and select Scale to Size. The Operators window will

close, and you'll see this AReXX script added to the window. Click the Add button a second time, hit Savers and select Save As IFF. Now, click Process. A window will open asking you to input a Scale Width. Remember those sizes I told you to write down? Here's where you get to use them. Input the desired width and click OK. Do the same for the Scale Height.



FRED's interface uses black rectangles to represent project images awaiting batch processing. Multiple projects may be opened at once (as shown here), allowing separate batches to be processed consecutively, each with independent processing instructions.

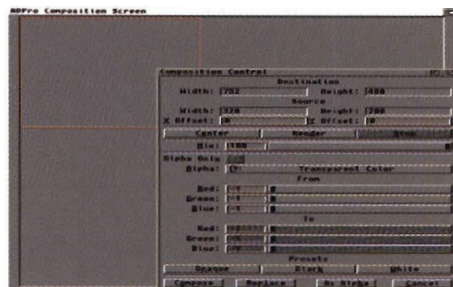
The next window asks you how you wish to save the image. Select Raw. Raw will process and save the image without sending it to the frame-buffer, which would constrain the image to your computer's display capabilities. File Treatment, the following window, allows you to select, or alter, the name of the output file. I like to change the append to .s (for scaled). Select Append, close, and in the next window, change .iff to .s.

A window will ask you for a destination directory. You should select Keep In Same Directory if your base images are in the Composites drawer. Otherwise, send them to this drawer. The next window will ask you if you want to save the images as a FRED sequence. This is useful if you want to create a sequence of images that you can then call up and process differently at a later date. We're not making a sequence, so select No. Your selection will close the window and begin the processing of your images. You should see the Scripts to Invoke window loading the images, one after another, until it completes the processing. (Scripts to Invoke notes its progress at the top of the screen.) If you wish, use the Left Amiga-M keystroke to bring the

Workbench forward. You'll find ADPro's loader/saver happily working away! Once completed, FRED will return to the project window and await further instructions. Repeat this procedure for each of your batched (according to size) images.

Stuck

One of my greatest frustrations comes when I discover that I need to do something with my computer that apparently no one else in the known universe has ever needed to do. I encountered such an anomaly when I tried to composite the images in a batch process. It's important to composite the scaled images to your 752x480 black background. No program exists (that I could find—and I looked!) that does compositing in the way I needed. The problem was that the images weren't part of a sequence. They were individuals, each with its own unique name, and they needed to stay that way. What I discovered was that virtually every compositing solution for the Amiga, whether a standalone or part of a greater image processor, was designed primarily for use on a sequence of files, like those in an animation or digitized video. So files with different names can be sent in, but they'll come out the other end with identical names, except for an attached number representing place in the sequence. This became a problem when, after convincing my company



ADPro's Composition Control panel is simple, yet highly functional.

that I could save them tons of money by doing work in-house that normally would have been sent out, I ran into this little catch-22. But I'm a solution-oriented kind of guy, so I forged ahead—and so should you!

The bad news is, due to the fact that we aren't working on a sequence of images, FRED can't batch-process

this part of the procedure. It must be done by hand, one at a time, using ADPro's compositor. The good news is that it's easy to do and goes quickly once you get the hang of it!

Sticking It to Them!

The bottom loader on the ADPro window is a cycling gadget. Clicking on it will let you choose the way you want to load your image: Replace, Compose or Landscape. Select Replace, click the IFF loader and load BlackBkgnd.iff. Once it has loaded, cycle the gadget to Compose and load your first scaled image. ADPro's Composition Screen will open, and the Composition Control window will superimpose it. ADPro's Compositor is well-designed and very functional. It's one of my favorite ADPro features, and one that I have yet to see rivaled in any other image-processing software. The red bounding box represents your image. At this point you must decide where you want to position your image on the screen. ADPro's Composition Screen follows the rule of thirds, allowing you to place the composed image anywhere within nine fields. As I need mine centered, we'll go with that. Click Center, and the red box will jump to the middle of the screen. Next, hit Compose. ADPro will load the base image over your previously loaded black background image and will compose the two together. Save the image as a Framestore to your Framestore directory. Voilà! You've created your first video slide from previously incompatible source materials! Repeat the procedure for each of the scaled IFFs.

The Finale!

A number of programs and hardware options can play and control the output of the slides to your video display. One timesaving method is to save the Framestores back into the same directory from which you loaded the original scaled IFF, allowing you to simply select its name from the list and add a Framestore number. This way you can keep track of your progress visually. Then, with a utility such as DirectoryOpus, move the completed composed Framestores out of the Composites drawer and into your Framestore directory. Since the

Composites drawer is already inside of the Framestore directory, they'll move quickly. You must move them out of the Composites drawer or the Toaster won't be able to locate them.



A batch-happy McBride with a cup o' Joe, his stimulant of choice.

This system can be adapted in many ways to suit your particular needs. Don't be afraid to experiment. (And, if you find a compositor that will do the last stage as a batch function, I'd really appreciate a call!)

VTU

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HELPFUL TIPS

Though FRED is a very powerful batch processor, it can be finicky. Below is a list of filename extensions that should not be used with it. (I was given the list by a former programmer for ASDG.) FRED will not load or save files that have been assigned these extensions:

.C

.O

.ASM

.STP

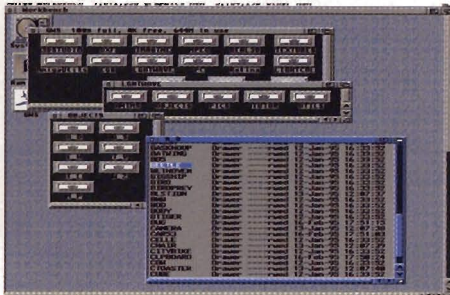
.H

.I

CD-ROM & VT continued from page 55

AmiCDROM 1.15

AmiCDROM took the Amiga world by surprise when it was released in 1994. Finally, a freely distributable CD-ROM file system! AmiCDROM even comes with source code in case any of you hackers want to modify it.



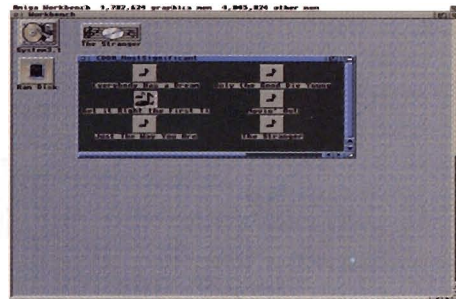
A CD-ROM file system makes a CD appear just like a normal Amiga disk. Pictured here is the contents of the CD 3D Arena.

Installation of AmiCDROM is fairly straightforward, using the standard Commodore Installer program. Some of the options assume technical knowledge, but if you choose all the defaults, you should be OK. AmiCDROM reads discs in ISO-9660 and Mac HFS formats, among others, and it works like a champ. Its support of Photo CD and audio discs, however, is not as streamlined as AsimCDFS'.

AsimCDFS 3.0

AsimCDFS has been around since 1992 and was the first Amiga CD-ROM file system to read Macintosh HFS discs. It's a professional package, complete with a printed manual, a superior Installer script and a complimentary disc full of freeware. AsimCDFS reads all known disc formats and comes packaged with AsimTunes, an audio CD player and disc librarian, and AsimCDFS_Prefs, a GUI-based tool for setting file system options. AsimCDFS has numerous features that the other two file systems do not. It conveniently reads Kodak PhotoCDs from the Workbench, creating icons that are thumbnail versions of the images themselves, and automatically converts images to 24-bit IFF format. (Direct support for Framestores is reportedly coming soon.)

AsimCDFS reads digital audio directly from any compact disc, provided that your CD-ROM drive supports this operation, and treats it like a sampled sound. (Direct support for converting this data to Flyer audio clips is also reportedly on the way.) The file system uses internal caching to scan directories more than twice as fast as the other file systems can, and it even emulates the special features of Commodore's old CDTV and the newer CD32. Many of these feats can be accomplished with CDFileSystem and AmiCDROM in combination with other programs (e.g., digital audio can be read using the freeware program CDDA by Michael van Elst), but AsimCDFS provides everything in one convenient package.



AsimCDFS allows audio tracks to be handled like files.

Off You Go!

Any of these file systems will give you the basics of a working CD-ROM setup. If you don't mind spending the money, AsimCDFS has the most features and is the easiest to set up and use. It clobbers the others in directory scanning speed. AmiCDROM doesn't have as many bells and whistles as AsimCDFS, but it is a solid performer, and the price is certainly right. CDFileSystem works fine for ISO-9660 discs, but it can't read Mac HFS and PhotoCD discs. With a little planning and this information, you should have no trouble putting together a CD-ROM setup that works for you.

VTU

Daniel J. Barrett is a longtime Amiga user and the author of *BLAZEMONGER*. He is currently pursuing a Ph.D. in computer science at the University of Massachusetts. E-mail him at barrett@cs.umass.edu.

PowerMacros 3.5

Easy Control of Animation Effects

by Stan Shumlick

Pick up a box of PowerMacros and, know it or not, you're wielding the power supreme. Reduce objects to pieces with little more than a thought. Manipulate molecules with the intensity of a hurricane. Multiply and modify elements of your choosing. Or, if an all-mighty complacency suits you, plop down on a chair and watch the software take hours off your acts of creation.

Installation is simple. The package includes 17 ARexx macros that work with NewTek's LightWave and Modeler software. The macros are divided into four categories for ease of use: business graphics, energy effects, Layout shortcuts and Modeler construction aids.



Blow Up II, used with the Shatter macro, does exactly what its name implies.

If you've ever needed pie charts for a business presentation, Pie Chart 1 and 2 make creation of these standard elements quick and painless. Pie Chart 1 will construct its namesake in the proportions that you select from the requester and give each section a unique surface name. It builds a single object, whereas Pie Chart 2 produces individual objects for further animation possibilities.

The energy macros—Blow Up, Shatter and Swarm—give you easy-to-use controls over some very complex animation tools. Blow Up and Shatter are used together to achieve spectacular effects. First, use Shatter on the object of your choice. The macro spends a couple of minutes chopping your once-beautiful object into many small and irregular pieces. Finally, run the Blow Up macro and have complete control over the explosion dynamics of the

pieces of your original object. You can even add bounce to the pieces as they reach the "floor." I had a lot of fun blowing some of my stuff to smithereens and varying the velocity and trajectory of the pieces. For space scene addicts, these macros are a must.

Swarm II, as it is now called, allows for easy manipulation of any number of objects in a swarming motion. I easily created several interesting scene files. Once I began trying the example provided, I was instantly intrigued. Actually, I spent the better part of two hours creating some really fun swarms. I started with some leaves and soon progressed to swarming clouds of cows and the number 9. You can make virtually anything swarm about the screen,



Shatter will dissect any object into thousands of pieces.



The new Swarm II feature allows you to have any number of objects move in unison.



Transferring files and objects is a breeze with the Move Scene macro.

controlling your swarm with "attractor" and "repeller" objects. (Note: that's how you must refer to them.) Using a box for my attractor objects, I was able to make my swarming objects respond in a variety of ways; by changing the size of my attractor objects, I changed the strength of the attraction. I moved the objects about the screen and was pleased with the amount of control I was able to achieve in just a few minutes with only a small amount of tweaking.

The Focal Distance macro is a valuable tool for digital cinematographers. It creates a focal distance envelope to use with your camera to control LightWave's camera lens. Focal Distance allows for "rack focus"-type shots in your animation, giving you the same freedom that camera jocks in the real world take advantage of daily. Yours is calculated automatically, so it's perfect every time!

Move Scene is also a savior. Have you ever taken a scene to a friend's machine to show your

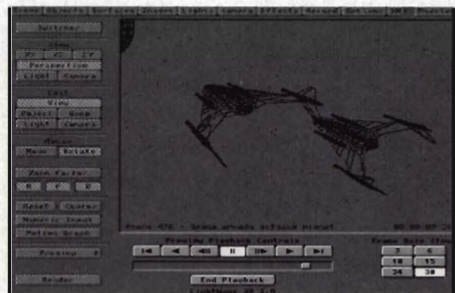


Render Batch offers automatic mass processing of scenes as Framesores or IFF images.

work, only to find out that you forgot an object or an image map? I have, and it somehow ruins the fun of sharing one's accomplish-

ments. Move Scene will take your scene and its associated files and transfer them to a device on your system that you specify. It'll also alter the scene file so that the scene will load directly from the device you selected without the annoying prompts we have all seen at one time or another.

Render Batch provides an elegant method of rendering multiple scenes (giving you a great reason to get away for the weekend) and the ability to change both the image file type (from scene to scene) and the destination directory where the images will be stored. You can choose either Framesores or IFF image format for each scene rendered. After the fifth scene,



The Time Code Preview macro interface.

though, all of the following scenes will use the image format you entered for the fifth scene.

The Time Code Preview macro is one of the new macros available in the newest release of PowerMacros on the Amiga (ARexx). It allows users to stamp an existing preview with time code, and there are options to set the starting time and frame rates to match those of video and film.

The Smooth Velocity macro does what its name indicates. SV was a little buggy when I tried it, though there is a note in the manual explaining that a future update will not include these glitches. Though I lost some of my objects settings with this macro, adding and parenting a couple of nulls solved that problem, and I had a very smooth motion path.

The Modeler macros provide a great set of useful tools. I used the Clone Object and Surfaces macro (that's right, I said *and Surfaces!*) on an animation for a recent client. I needed to have several

versions of the same object with different surface names and wasn't looking forward to sitting in front of my computer and manually loading and renaming each object and surface. That would have been a daunting task—my original object had 15 surfaces and I needed a dozen copies! PM's Clone Object and Surfaces macro does it for you. It took my original object and surface names and appended a number to each name, and was done faster than it took me to write this sentence. Wow!

Another notable macro that I like very much is the Mirror Using Polygon script. It allows you to mirror any object using a flat polygon as your mirror. For example, Modeler's mirror function is constrained to the axes in Modeler's three views and does not allow you to mirror at weird angles. With MUP, you can rotate the heading, pitch and bank of the mirror polygon and get some great results. I immediately incorporated it into a new spacecraft. I found myself mirroring the geometry of my ship in interesting ways, to avoid looking like anything else I've seen in sci-fi.

PowerMacros 3.5 recently underwent small modifications for performance and cosmetic reasons, but these alterations shouldn't affect the end user. The program is only compatible with LightWave 3.5 at press time, and plans for a 4.0 compatible version are still under consideration. Overall, I found that PowerMacros 3.5 has made many of my animation tasks much easier.

VTU

Company mentioned:

CineGraphics Inc.
(PowerMacros:
Amiga—\$149; PC—\$249)
4225 Executive Square, Ste. 500
La Jolla, CA 92037
(619) 727-5589

FOR INFORMATION CIRCLE 63

Stan Shumlick is the Flyer SIG Director for the Los Angeles Toaster Users Group and a partner in 2Tall Video Productions, based in Glendale, Calif. E-mail him at stan@ecn.com or 71612.1725@compuserve.com.

make a commitment here: We do not intend to concentrate our efforts only on Europe. Our location is in Bensheim, but our market is worldwide...."

"The American market is not only important to us for selling hardware. There is also a great potential for development of [R&D] intelligence here. NewTek, for instance, is an important strategic partner for us. We want to support the Video Toaster, and are currently negotiating with NewTek to build up a strong partnership and set up license agreements to get new products based on the Video Toaster technology.

"Another partner for the American market is our new distributor, SMG. SMG will take care of distribution and spare parts for the North American market. SMG is well-known and [has been] appreciated as a service provider for a long time.

"The set-top box is an important topic at Amiga Technologies. We have now finalized several agreements in the U.S. I will mention our agreement with Viscorp, which was just finalized a few weeks ago. Omnibox in Connecticut is another company we are currently dealing with. Through set-top box systems, we are confident that the Amiga platform will enter into millions of households. No other computer manufacturer is able to provide a system that multitasks with 2 MB of memory...."

"We look at our competitors. I recently went to a fair where a computer manufacturer proudly presented its new machines. I asked one of the guys at the booth to demonstrate for me the multitasking abilities of his system, and he replied: 'Please wait a few minutes, sir. As soon as this disk formatting is completed, I will show you real multitasking.' I said, 'No further questions!'

"Our strength, more than the hardware platform, is our operating system. AmigaOS is excellent and will become even better. We have decided to port it to other platforms as soon as possible. Of course, we are also aware of the features that our system lacks. Long-awaited features like memory protection, virtual memory and strong network abilities are on top of our To-Do list. The next version of AmigaOS will hopefully include all these important things...."

"Ladies and gentlemen, it is more and more evident every day that the combination of Intel and Windows 95 is not satisfying for many people. It is also a threat for the computer market that a

monopoly like this tends to establish itself. Therefore, it is important that systems like the Amiga improve their market position so the user can still find an alternative way. To improve our market position, we know that we need to improve the product. This improvement has to be done on the hardware and the software side. The 68000 processor family from Motorola, which is still powering our models, will end its evolution after the 68060...."

"We knew from the beginning that we had to look for a new processor. There were many options possible. We made our choice. The next Amiga will be called Power Amiga. We removed PC for aesthetic purposes. [Laughter] Let me now explain this choice. The PowerPC processor is fast...especially when it runs a decent operating system. We believe that with an operating system like AmigaOS, the PowerPC processor will show all the power that it has—it will be faster than with other operating systems...."

"Another important reason for our choice is the strategic partnerships that this processor brings to us. Apple already had the experience of a migration from 68000 processors to PowerPC, and we can take advantage of this experience. Motorola and IBM will also be precious partners for the Power Amiga project on both the software side and the hardware side. Of course, we are also in talks with IBM and Apple...."

"All in all, the Power Amiga project will involve more than a dozen companies. We are confident that such a synergy will make things happen very fast. Our team is ready to go! Thank you."

Now, an excerpt from the keynote speech by Tim Jenison, NewTek's president and inventor of the Video Toaster and Toaster Flyer.

"For me, almost every computer has a personality. The personality of the designer is crystallized in the design of the machine...[With the Amiga] I could see in every facet of the design the vision of the designer. What Jay Miner wanted was to bring animated graphics and high-quality sound, which was, at the time, a rather foreign concept. Everything we saw in the Amiga back in 1986 is what passes for state-of-the-art multimedia. I saw that the machine could help me reach my dream of making a very low-cost video production system. The computer proved to be a very friendly machine, much like its inventor...."

About the creation of the Video Toaster: "I said: 'Thank you, Jay. This is great.' This was about the time Commodore began to have problems. The Commodore brass never really understood the unique capabilities of the Amiga. Fortunately for NewTek, the Video Toaster and the Amiga found a very receptive audience among video producers. They saw our machine not as a slipping computer, but as a powerful, cost-effective and friendly way to produce videos—and the Video Toaster revolution was underway. Meanwhile, we began to work on the Video Toaster Flyer to solve the problems of tape edit-



NewTek President Tim Jenison traced the history of the Amiga and Video Toaster during his keynote address.

ing. It has been a long, agonizing process.... I am proud today to be here today with the latest version of the Flyer software: We've made many enhancements, and it is a very solid piece of software...."

About Commodore leaving the market: "NewTek began to accelerate efforts to implement our next generation of desktop video technology on other computer platforms. We basically had no choice. I am happy to say that today we are close to bringing some of those products to market. The Video Toaster for Windows is a very good product, and I am very proud of it.

"I am happy to report that we have found a way, as Petro would say, 'to make good business together [with Amiga Technologies].' I'm also proud that here beside me is a brand, spanning new Amiga 4000. Welcome back, Jay. I'm damn glad to see ya!"

This next part is perhaps the most difficult. It requires a bit of self-examination and soul-searching. How much money do you want—or need—to make? You—not the business. How much money are you gonna take home to your wife and kids to go on vacations with? This is really tough for two reasons. For starters, it can add to the bottom line. But the real reason is that it is an indication of how we view ourselves. Are you a Ford or a Ferrari kind of person? When you decide how much you want to take home each year, divide that amount by 12, put it in the row of figures and total it all up (Figure 2). Yikes! That's how much you need to make *every* month in order to be in this crazy business.

Pricing

Fine, but how much do you charge? Be realistic and make an estimate of how much you are actually going to work. That is, how many days are you going to work that are *billable*. I'm sure many of you realize that nonbillable hours are a necessary evil in any business. Others will tell you that owning your own business is great because you can work half-days. All you have to do is decide which 12 hours you want to work! At any rate, you have to be true to yourself here. If you overestimate the number of billable days—or the value of your equipment—the consequences could be horrible. You have to know what to expect if you overestimate (or underestimate) any one of these figures, or you are too optimistic about that "big break" on the horizon.

Here's a perfect example: I recently went to an auction hoping to pick up some gear at bargain prices. It had been a full studio—a small one, but with really nice gear. In auctions of this type, the auctioneers will first take bids for the whole lot of equipment. If the owner is happy with the bid, then the auction is over and the bidders all go home. But the owner may think that selling the equipment piece by piece will generate more money, in which case the auctioneers will just go down the list item by item. Well, as the story unfolded, there was a high bid for \$175,000 for probably a \$500,000 studio. The pressure was on the owner of the gear. He had to make a decision on the spot. Was there

going to be more than \$175,000 in individual bids, or should he take the cash and run? Well, unfortunately, the same sense that caused this guy to go out of business prevailed in the auction, because I don't think we came close to \$175,000 in individual bids.

It may be sad to see \$100,000 cameras going for \$22,000 (unless you are the guy with \$22,000 in your pocket), but the reality of the situation is harsh. Overestimate the number of days you'll work or underestimate your expenses, and you may wind up having an auction of your own!

Back to our equation (Figure 3). Take your final total of monthly expenses and divide that by the number of days or hours you truly think you are going to work. There it is, in black and white. That's how much you must charge if you are going to manage

three hours, and we were scheduled to be done by 9 a.m. or 10 a.m. I didn't want to risk being unavailable for another client, and this guy wanted me to essentially sell him a day for three hours of pay that I could sell to someone else who would gladly pay full rate. I said something like, "Why don't you call me when you have some full days," and he got bent out of shape. To this day he refers to me as "that %&@% Fenwick." Oh well. I'm still in the business and paying all my bills. Remember, sometimes the best thing to do is walk away from the bargaining table and spend that time you were going to work for "minimum wage" looking for better gigs.

Problem No. 2: The statement "My clients won't pay that for a Toaster." Toaster is the qualifying word. There is no reason why you need to make any apologies for the tool that you are using. I take my machine into some of the finest post-production houses in the San Francisco Bay Area, and I've had engineers who are usually staring at \$8,000 color reference monitors trying to find something to bad-mouth about my equipment. And they can't. If you're diligent and careful about what you are doing, use good software and push all the right buttons with few shortcuts (the render may take longer, but it will look better), then the video gods *will* be good to you and you *will* be rewarded.

One last quotation. This one came from (of all places) *Mac User*: "Don't blame your tools. A craftsman doesn't blame his tools. [They] may be slow, buggy or missing features, but the blame is ultimately yours. Blaming your tools is wimpy: fundamentally, you either do a job or you don't."

On this personal level, being in a creative business like ours has many advantages and can be very rewarding. It can also be full of pitfalls and can almost ruin you financially if you're not careful. The Toaster and the Flyer provide you with professional quality at a price almost everyone can afford. Take advantage of the tools at your disposal, be honest about what you need and can do, and you just might realize your dream of having your own video and animation business!



Figure 3: A realistic work projection helps you reach the bottom line.

a healthy, happy, long-term little business. Your response may be, "My clients won't possibly pay that kind of money for a Toaster!" There are two problems with this thinking.

Problem No. 1: "My clients." If you want to run a business that will be around after the next auction, you might have to re-evaluate who you are working for. Another quotation, from my friend Scott McQuaid, comes to mind: "If you can't say no, then you aren't really freelance." Sometimes the best thing to do is say: "I'm sorry, but maybe you should consider some other vendors. I can't possibly drop this price any lower."

Several years ago I upset a local videographer (I hate that word) when he offered me what I considered an unacceptable amount of money to work on an early morning, "golden hour" shoot. He only needed me for

Building the Perfect Beast continued from page 51
 changing greatly as uncertainty about the Amiga disappears with Amiga Technologies coming on, and as the



Flite Gear offers Flyer users batch digitizing and flyer clip cataloging, project backup and restoring, and more.

Toaster/Flyer 4.0 is finished. I wrote these tools for myself and my friends in the production community [because there was a need for them].

Describe your current product line.

Professional tools for video post-production. We have Flite Gear, which is batch digitizing, logging, cataloging and restoring for the Flyer; Radar, which is timeline editing, multicamera

the time, someone's livelihood maybe riding on it.

Being one of the first Toaster owners, what's the one thing you wish people knew about it?

[I wish people had more of] an appreciation for the technology it took to create [the Toaster] and the new ongoing new technology of VTASC and the new Toaster Flyer. The broadcast industry has been particularly blind to the quality and cost-effectiveness of it, though many, many broadcasters and cable outlets are using it on-air every day. High-end folks such as the Discovery Channel, Nickelodeon and NBC's *The Tonight Show*. I've found that, in most instances, the Toaster actually exceeds my expectations and meets the NTSC broadcast signal standard of RS-170A. The Toaster was the first desktop device that was broadcast-capable right out of the box! Other manufacturers have tried to duplicate it, but in my opinion, the Toaster still exceeds them. I think that because of the low price of the Toaster and Flyer, people won't give them the consideration they deserve.



Russell educates visitors to his Atomic Brand Software booth during the 1995 VTU Expo.

editing and match-frame editing for the Flyer; and FlightPod, a remote jog shuttle editing controller and our first hardware product. FlightVTR, which allows control of the Flyer and just about any VCR, is also shipping now.

My whole philosophy is not to break any new ground; it's to use the tools that are available today and make them better. Everybody is promising stuff in the future—I need to edit today. And that's why we don't release our software until it's truly ready: because I know that, most of

And what about the Flyer?

The Flyer provides you with a true D2 NTSC video signal, which very few manufacturers can compete with. I think with 4.09 and the 4.1 upgrade, NewTek has again started a revolution: broadcast, non-linear, real-time editing at affordable cost with the Flyer. 4.09 is a world away from what [the company] had last year with the "under construction" 3.09 and subsequent releases. During pre-development, NewTek goes out to all the hard

drive makers and asks for specs. Tim and the staff develop things based around those specs, and when the drives show up, not one is even near the stated specs. What a nightmare it must have been. With a lot of hard work, they've again found a way!

Has all the criticism of NewTek over the past year been justified?

Not really, because building the perfect beast is like building Rome—you can't do it in one day. I think NewTek was very straightforward about the fact that while the Flyer software was a project-in-progress, if people wanted to try the new technology or develop product for it, well here it is. Speaking as a third-party developer, since Paul and the gang left, things have been 100 percent better. NewTek is now embracing—and truly cares about—its developers. In my opinion, their third-party products have helped to make the Toaster and the Flyer what they are: low-cost, professional, easy-to-use video tools. What other system has its own monthly international magazine (*VTU*) where we can get tips, tricks and input?

What do you see for the future?

That's a hard one. I think with the direction NewTek is taking with the PC Toaster and the new Flyer, they will always be there. All companies go through some tough times, but it's the ones that are still there after the rocky times that have proven their worth. And both the Toaster and the Amiga have taken one of the worst hits imaginable. Any other company or technology would have shriveled up and died. No computer has ever come back from the dead—once they're gone, they're gone. It's been a rocky road for both the Amiga and the Toaster, but the results have been worth it.

When we started this trip we were all looking for a real time, non-linear editor with real broadcast quality at a price that we wouldn't have to mortgage the house for. Guess what? We've found it. The Amiga/Toaster/Flyer is the best, least expensive non-linear editing system in the world—period!

VTU

Company mentioned:

Atomic Brand Software, Inc.
 P.O. Box 9201
 Salt Lake City, UT 84109
 (801) 466-7330

FOR INFORMATION CIRCLE 47

USER GROUPS

East

MAVTUG

Bill Sharer
6629 Paxton Rd.
Rockville, MD 20852-3659
Voice/Fax (301) 230-2847
BDX: bsharer
CompuServe: 76426,112

The Amiga Video Graphic Society

Roger L. Elowitz
32 Duncan Dr.
Morganville, NJ 07751-1649
(908) 536-4786
Meets on the second Friday of the month, 7:30 p.m.

Pittsburgh Commodore Group No. 346

Robert W. Peach
P.O. Box 16126
Pittsburgh, PA 15242
BBS: (412) 396-5483
Meets on the third Sunday of each month at Duquesne University's Mellon Hall (except July and August).

Amuse

151 First Ave., Ste. 182
New York, NY 10003
(212) 460-8067
Fax (212) 290-6747
BBS: (718) 539-3338
Meets on the first Tuesday of the month at
NYU Main Building
32 Waverly Pl., 8 p.m.

Fine Art Productions User Group Society Network

Richie Suraci
Fine Art Production
67 Maple St.
Newburgh, NY 12550
Voice/Fax (914) 561-5866
Call for information.

MicroWave User Group

Art Baldwin
3670 Delaware Ave.
Buffalo, NY 14217
(716) 873-1856
BBS: (716) 873-9262
Meets on the first Wednesday of the month, 7-9 p.m.

Suffolk Video Club

Attn: William Pinto
15 Columbus Ave.
Brentwood, NY 11717-2506
(516) 273-4876
Meets on the second and fourth Thursday of the month (except July and August).

Toasterholics Anonymous

Armato's Pro Video
Chris Hendrick
6716 Myrtle Ave.
Glendale, NY 11385
(718) 628-6800
Meets on the second Thursday of the month, 7 p.m.

LightWave User Group

System Eyes Computer Store
650 Amherst St.
Nashua, NH 03063
(603) 889-1234
Meets on the second Tuesday of the month, 7 p.m.

South

VA Toaster Forum

Tidewater (Norfolk, Virginia Beach, Hampton)
George Triolet
902 Tabb Lakes Dr.
Yorktown, VA 23693
(804) 867-9056
Meets the first and third Wednesdays of the month, 7 p.m.

WV Video Toaster Users Group

Destiny Images
Jamie Cope
P.O. Box 4631
Charleston, WV 25364
(304) 445-2368
Meets on the second Tuesday of the month at Computers Plus in S. Charleston, 7 p.m.

A-TUG Border States Amiga Group

Micro-Tronix
1614 Towson Ave.
Fort Smith, AR 72901
(501) 782-4048
Meets on the second Saturday of the month, 9 a.m.

West Tennessee Video Toaster Users Group

Brian Churchill
8886 Davies Plantation
Memphis, TN 38133
(901) 385-1711
Meeting times vary.
Call for more information.

Club Toaster

St. Petersburg/Clearwater/Tampa
Jeff Asbury, Michael Price
9021 U.S. 19 North
Pinellas Park, FL 34666
(813) 576-5242
BBS: (813) 554-7593
Meets on the last Thursday of the month, 7 p.m.

VLS Graphics Users

1533 Lakewood Rd.
Jacksonville, FL 32207
(904) 396-0746
9600 V.42.bis
6p-9a M-TH; 6p F-9a M
Meets on BBS: (904) 396-0318.

Southwest Florida Toaster Users Group

Jim Franke
944 Country Club Blvd.
Cape Coral, FL 33990
(813) 574-2257
Fax (813) 574-2469
Call for information.

Midwest

Channel Z Toaster User Forum

Brian Plante
492 Sheridan Rd.
Evanston, IL 60202
(708) 332-1710

DMAAUG

Des Moines Amiga Group
Arthur Szczygielski
4046 Hubbell Ave., Ste. 155
Des Moines, IA 50317-4434
(515) 266-5098
Meets on the last Tuesday of every month at the Christ Church, Ashworth and 74th Street, 7:30 p.m.

Discover-Ring Desktop Video

Ring Video Systems, Inc.
3250 S. Harlem Ave.
Riverside, IL 60546
(708) 442-0009
Fax (708) 442-5290
Meets first Wednesday of each month. Call for more details.

Chicago LightWave Association

AGA, Digital Studios
Dan Ablan
680 Lake Shore Dr., Ste. 925
Chicago, IL 60611
(312) 649-9391

Digital Arts Toaster User Forum

122 W. 6th St.
Bloomington, IN 47404
(800) 692-6442
Call for more information.

Toast of Tulsa

Stewart Guss
Computer Consultants, Inc.
P.O. Box 691810
Tulsa, OK 74169
(918) 665-1589
Meets second Sat. of the month at 2:30 p.m. at Hardesty S. Regional Library, 6737 S. 85th E. Ave.

TUGSM

Toaster Users Group of Southeastern Michigan
Michael A. Greer
25109 Greenbrooke Park
Southfield, MI 48034
(810) 355-5916

Video and Graphics SIG

Charles Meier
P.O. Box 811
Bridgeton, MO 63044
(314) 739-5181
Meets last Wednesday of the month.
Call for details.

Rocky Mountain Amiga Users Toasters SIG

Don James
The Computer Room
9625 E. Arapahoe Rd.
Englewood, CO 80112
(303) 696-8973
Meets on the third Monday of each month at Virginia Village Public Library: 1500 Dahlia St., Denver, CO, 7-9 p.m.

West

A.A.A.A.

Arizona Assn. of Artists and Animators
Richard Garrison
Dave Thompson
(602) 968-7922
Meeting times are flexible; call for information.

Inland Empire Toaster Users

Neil Abeymayake
826 Brookside Ave., Ste. B
Redlands, CA 92373
(909) 335-1209
e-mail: scanam@realn.net
Meets on the first Thursday of the month, 6:30-9:30 p.m.

LA Toaster User Group

Ken Wilder
1818 W. Victory Blvd.
Glendale, CA 91201
(818) 552-5024
Fax (818) 552-5025
Meets on the second Saturday of the month from noon to 5 p.m. at 10844 Acama St., N. Hollywood.

MACRO Graphics/Multimedia

Bill Graham
P.O. Box 11681
Phoenix, AZ 85061
(602) 864-9183
Meets first Thursday of every month.

Orange County Toaster Users Group

Bruce Gleason
Thumbs Up Video
1206 W. Collins
Orange, CA 92667
(714) 633-3629
Meets on the third Thursday of every other month, 6:30 p.m.

Sacramento Video Toaster Society

Glen Cornish
Applied Computer Systems
6108 Watt Ave.
North Highlands, CA 95660
(916) 432-9358
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Amiga LightWave User Group

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Mark Miller
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San Diego, CA 92115
(619) 463-0545
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T.U.G. 98XXX

Larry Simpson
Amiga Northwest Studio
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Bothell, WA 98011
(206) 488-1129
Quarterly general meetings; weekly special-interest meetings.

Washington Area User Group

Wade Nelson
Spectral Multi-Media
10655 NE 4th St., Ste. 400
Bellevue, WA 98004
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Meeting times vary.
Call for more information.

Pacific Rim

OvenRange

Katutoshi Takahashi
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AG-456

2-Hour S-VHS Camcorder

- S-VHS system - records and plays over 400 lines horizontal resolution
- Now includes manual zoom control
- Laminated amorphous heads assure exceptional picture quality, high resolution, superb color reproduction, and high signal-to-noise ratio
- 12:1 power zoom lens with continuously variable speed zoom
- Hi-Fi stereo and linear track for recording. Also has "Audio Out" select switch for Hi-Fi/Normal/Mix combinations
- High performance stereo zoom microphone features three different settings: Wide, Telephoto or automatic zoom.
- Built-in VITC (Vertical Interval Time Code) time code generator gives absolute address to each frame of video for frame accurate editing (with specific edit systems)



NEW!

PV-DV1000 3-CCD Digital Videocassette Camcorder

Heralding a new era in video, the PV-DV1000 is the world's first camcorder to incorporate 6mm DVC (Digital Video Cassette) technology. The biggest leap in video since S-VHS and Hi8 were introduced six years ago, DVC is a revolutionary video format that delivers such high quality—it literally rivals broadcast cameras. Utilizing DVC the PV-DV1000 records an extraordinary 500 lines of horizontal resolution—nearly 25 percent more than S-VHS, Hi8 or Laserdisc, and 50 percent better than a live television broadcast. And because it's digital, picture quality is not only sharper but unbelievably clean. Audio is also recorded digitally, resulting in quality equal to that of CDs. In addition to it's digital capabilities, the PV-DV1000 also features a 3-CCD pickup system, 180,000 pixel color viewfinder, 10:1 power and 20:1 digital zoom, full automatic and manual controls and a large LCD panel.



- Three CCDs with 270,000 pixels each are horizontally staggered for optimum resolution.
- Digital recording system delivers incredible 500 lines of horizontal resolution and virtually no noise. The signal-to-noise ratio is 54dB, an improvement of 6-9 dB over conventional analog systems. This actually represents a S/N ratio 2-3 times better than existing camcorders.
- Audio is also recorded digitally using PCM (Pulse Code Modulation) for quality that rivals CDs. You can choose between two-channel 16-bit recording or two sets of 12-bit stereo, with the second set reserved for uses such as narration.
- Includes a huge 1.5" 180,000 pixel color viewfinder. More pixels than any other camcorder to date, the viewfinder provides a remarkably clear, accurate image with 400 lines of resolution and displays all automatic and manual features on demand. The viewfinder also tilts 120 degrees vertically for shooting subjects from high or low angles, & its professional size means you don't have to press it against your eye to see the picture.
- Variable high speed shutter goes from 1/60—1/8000 of a second in 14 increments.
- Built-in Digital Electronic Image Stabilizer (DEIS) compensates for jittery video and is particularly effective when the digital zoom is employed.
- Equipped with 10:1 power and 20:1 digital zoom lens. Both zooms are adjustable in four speeds (3.5 seconds—15 seconds) based on how hard or soft the zoom toggle is pressed. To set up a shot quickly, a Turbo Zoom function moves from light to wide angle, or vice versa, in under two seconds. For extreme close-ups the lens can focus up to 1/4" from the subject.
- 3 features for finding previously recorded scenes easily:
 - TopScan plays back the first few seconds of each segment, providing a handy way to review an entire tape.
 - Record/Review rewinds the camcorder and plays the last 10 seconds of the last recorded scene, ideal for making sure you got that important shot.
 - Indexing function encodes the first scene shot on a given day, so you can quickly find the starting point of each day's shooting.
- Digital Photo-Shot let's you record a still-frame for about six seconds, while audio continues as normal. This feature is great for creating video photo albums or insurance tapes, as 290 still pictures can be recorded on a single 30-minute tape and 580 shots on a 60-minute tape. Using the TopScan feature any shot can be found easily.
- Large LCD panel on the side of the camera displays camcorder status and operating modes.

Canon L2

INTRODUCING THE NEW CANON L2 HI-8 CAMCORDER WITH VL MOUNT FOR INTERCHANGEABLE LENSES, RC TIME CODE AND DIGITAL EFFECT FOR UNLIMITED CREATIVE FREEDOM.

- 1/2" CCD with 410,000 pixels delivers over 450 lines of horizontal resolution
- VL Mount System allows use of a full range of interchangeable lenses from extrawide angle to super telephoto plus, optional EOS-VL adapter allows mounting of over 65 Canon EOS 35mm Autofocus lenses.
- Records RC Time Code while shooting and can also "strip" RC Time Code to tapes already recorded on other equipment. With RC Time Code the L2 can be connected to an edit controller with RC Time Code capability for frame accurate editing.
- Advanced encoding functions mean the L2 can record much more than audio and video. It will mark tapes for speedy identification, and even find recordings by their date.
- Includes wide range 15:1 zoom lens with special coating to cut flare and ghosts while providing high contrast and natural tonal gradation. The lens also has an 8-blade iris for precision exposure control.
- Provides stunning AFM stereo with the choice of auto or manual level control. To match the audio with video the L2 has a high performance stereo/zoom microphone which lets you select the stereo angle and recording sensitivity.
- High speed Piezo autofocus allows focusing through glass or water. Also provides focus lock and manual focusing.
- Provides two different apps with independent start/stop and zoom controls. Built-in sports finder lets you view the viewfinder from arm's length away.
- Built-in character generator lets you superimpose two lines of up to 16 characters on your recordings. There is also a choice of three date and time displays.
- Variable high-speed shutter from 1/100 to 1/10,000 of a sec.
- Includes a wireless controller which to make it a highly sophisticated edit deck. Includes a full-function shuttle dial allowing easy selection of range of forward and reverse playback speeds for swift, precise scene location.



- Automatic exposure plus manual control lets you lock the aperture at any setting from fully stopped down to fully open.
- The L2 has a variety of special effects. Add an extra dimension to your video productions with digital image manipulation and striking scene transitions.
 - Close-up - instantly doubles the magnification of the lens, giving you a 30:1 zoom
 - Slow shutter - four slow shutter speeds allow recording in light levels as low as 0.5 lux or add artistic after-images
 - Overlap - (dissolve) Wipe - this effect slides the picture off the screen while simultaneously replacing it with a new scene.
 - Freeze - freezes the picture while sound recording continues uninterrupted.
 - Art Freeze - records your scenes as colorful paint-like images
 - Stroke and Art playback modes - slow speed strobe playback can be combined with three levels of digitalization effects.

JVC

GY-X2B 3-CCD S-VHS Camcorder



- Newly designed three 1/2" CCD image sensors deliver 750 lines of horizontal resolution and superb signal-to-noise ratio of 62dB
- New micro-lens technology provides exceptional sensitivity of F8.0 at 2000 lux and LULLUX mode lets you shoot with almost no light! Shoot superb footage with excellent color balance at a mere 1.5 lux
- Variable Scan View allows flicker-free shooting of a computer monitor.
- Quick Record Mode - when turned on the camera is set to the auto iris even if lens is set at manual. Also activated is (ALC) Automatic Level Control and EEI Extended Electronic Iris which provides both variable gain and variable shutter. Now you can shoot continuously from dark room to bright outdoors without having to adjust gain, iris or ND filter.
- Full Time Auto White circuit lets you move from incandescent to fluorescent to outdoor lighting without changing white balance or the filter wheel.
- Genlock input allows synchronization with other cameras.
- Dual output system allows camera output to be connected directly to an external recorder

SONY

EVW-300 3-CCD Hi-8 Camcorder



- Equipped with three high density 1/2" IT Hyper HAD image sensors. Has an excellent sensitivity of F8.0 at 2,000 lux, high S/N of 60 dB, and delivers over 700 lines of horizontal resolution.
- PCM digital stereo and single channel AFM Hi-Fi recording. XLR balanced audio connectors.
- Quick start 1.5" viewfinder with 550 lines of resolution plus Zebra pattern video level indicator and color bar generator. Also, quick-start recording - takes only 0.5 seconds to go from REC PAUSE to REC MODE for immediate recording in the field
- Built-in 8mm Time Code generator records absolute addresses. (Either non-drop frame or drop frame mode may be selected.) Furthermore the EVW-300 incorporates a variety of time code features such as Time Code PRESET/RESET, REC RUN/FREE RUN & User Bits.
- A variety of automatic adjustment functions for different lighting conditions are incorporated into the EVW-300:
 - ATW (Auto Trace White Balance) - when ATW is turned on optimum white balance is always ensured during recording, even for changes in color temperature. Conventional white balance adjustment is still provided with the Auto White Balance.
 - AGC (Automatic Gain Control) - in addition to manual Gain Up AGC provides linear gain up in the range of 0 dB to 18 dB.
 - Intelligent Auto Iris - for situations where the lighting between subject and background is different (subject is underexposed) the Intelligent Auto Iris automatically examines the scene and adjusts the lens iris for proper exposure.
- Selectable Gain-up from 1 dB to 18 dB in 1 dB steps for Mid and High positions.
- Clear Scan function - provides a variety of selection of shutter speeds ranging from 60-200 Hz allowing recording of almost any computer display without flicker.
- Compact, lightweight (12 lbs with NP-18) ergonomic design provides well balanced and extremely comfortable operation.

Panasonic

AG-DP800 SUPERCAM

S-VHS 3-CCD Digital Signal Processing Camcorder



- Three high-density 380,000 pixel CCDs with half-pitch pixel offset achieves over 700 lines of horizontal resolution, a S/N ratio of 60dB and remarkable sensitivity of 18 at 2000 lux. Additionally the Frame Interline Transfer (FIT) CCDs minimize vertical smear, so you maintain impressive picture quality even in very bright illumination.
- Digital Signal Processing circuitry provides four valuable benefits:
 - 1) Consistently reliable up-to-spec performance.
 - 2) Fine adjustment of a wide range of parameters.
 - 3) Memory storage and instant recall of specific settings.
 - 4) More flexible and higher quality image processing, as well as easier maintenance.
- Some of the DSP circuits and their functions:
 - CHROMA DETAIL - This function compensates for poor resolution in the high chroma areas of the picture.
 - DARK DETAIL - Determines optimum degree of colour enhancement in dark areas to deliver crisp, natural-looking images
 - HIGHLIGHT COMPRESSION - Expands the dynamic range of the highlighted areas and prevents halation. The highlight compression circuit allows a wide dynamic range producing detailed images even against bright backlight or daylight.
 - FLARE CORRECTION CIRCUIT - Compensates for unwanted black caused by light or by a subject's movements.
 - Six Scene File modes. There are two user modes for custom digital parameter settings including Horizontal Detail, Vertical Detail, Chroma and Dark Detail, and Color Correction. The four preset modes are normal, fluorescent, special and sparkling.
 - In addition to regular AGC (Automatic Gain Control), Supercam has a Super High Gain mode. At F1.4 this enables shooting under illumination as low as 2 lux while retaining detail and color balance.
 - Synchro Scan function allows flicker-free shooting of computer monitors. Electronic shutter increments can be set variably from 1/61 seconds to 1/253 of a second.
- Built-in internal time code generator lets you record with SMPTE LTC/VITC (Longitudinal/Vertical Interval) time code
- Two hi-fi stereo audio channels with a dynamic range of 80 dB, as well as two linear audio channels with Dolby NR. Normal/Hi-Fi recording is selectable. Uses XLR connectors to further assure high-quality sound.
- Phantom power can be supplied to an optional microphone. Power can be switched off to prevent battery drain when not in use.



Quick-Draw Professional FOR CAMCORDERS OR STAND ALONE CAMERAS



- Designed for working from the back of a van or the trunk of your car. The top loading case has a wide open fold back top that stays neatly out of the way. It's lighter and more compact than shipping cases. This saving valuable storage space. With other equipment crowded around it the sturdy built-in frame provides added protection.
- Heavy duty shoulder strap & comfortable leather hand grip.
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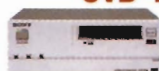
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SONY

CVD-1000 Vdeck Hi-8 Computer VCR



Computer-controlled Hi-8 player/recorder. You connect the Vdeck to the serial port of your computer and then, using software that incorporates Sony's VISCA Protocol you will enter a new age of machine control. With the Vdeck and VISCA software you can seamlessly integrate audio, video, text, and graphics to create polished in-house video for training, product demonstrations, and corporate communications.

- Records Sony RC Time Code to any 8mm or Hi-8 tape plus it can Dub RC Time Code to any existing tape. Also reads Sony Professional 8mm Time Code.
- With RC Time Code you can search for specific frames of video. The Vdeck reads RC Time Code even in fast forward or reverse so you don't have to switch to playback mode to read the Time Code.
- Has AFM Hi-Fi stereo plus a PCM digital audio track. You can use the PCM track to dub digital audio background music or high fidelity narration.
- Has 3 video inputs (S-Video, 2-composite) and 2 stereo audio inputs. The Vdeck features a built-in switcher for transparent integration of multiple audio and video sources.
- Built-in microphone minijack allows connection of a mic to the Vdeck letting you add narration to your presentations.
- Microphone/Audio Mixer - the Vdeck lets you mix your audio and microphone sources onto the AFM and/or PCM tracks while recording.
- Built-in fader lets you fade audio, video or colors during playback to give your presentations a more professional look. You can also fade live video. Create special effects by fading color to black & white (or vice versa). Fades can be preserved by recording onto a second VCR.
- The Vdeck can read and write data code, allowing date and time information to be stored on the tape as data. Lets you search for a specific date and time on your tape.

EVO-9720 Hi8 Dual Desktop Editing Machine

BUILT-IN EDITING CAPABILITIES

- The EVO-9720 provides two ways for assemble editing when using the supplied RM-E9720:
 - Quick-Edit - By simply pressing the EDIT button at the desired point on the source tape, pressing END at the output and repeating the process, a program is easily assembled, segment-by-segment on the master tape.
- Program Edit - assemble video segments that are not adjacent to one another on the original source tape. Memorizes up to 99 program events and realizes automatic sequential editing of pre-assigned scenes. To change a certain event in the program, simply recall the event and modify as desired.
- Insert Editing - Provides separate editing of video and audio signals. Using the video insertion function, video and AFM audio segments can be edited into an existing PCM digital sound track. A simulated edit can be monitored by pressing the PREVIEW button before the edit is actually done.
- The EVO-9720 allows audio dubbing on the PCM tracks. Background music or commentary can be added or inserted. During editing, audio from an external microphone can be mixed with the original audio from a player or from LINE IN and recorded on both the PCM and AFM audio tracks.
- Incorporates a digital field memory, allowing noiseless 1/5 normal speed slow motion pictures and a clear freeze picture to be played back during editing. This makes it possible to create a program with special effects.
- Built-in 8mm time code generator and reader. When using a tape without time code, you can stripe time code. (Post striping of 8mm time code will not affect any of the video and audio signals) Also reads RC time code.



SUPERIOR PICTURE QUALITY

- The player portion employs a digital noise reducer for luminance and chrominance signals, providing superior picture quality. Noise reduction levels are selectable in accordance with picture conditions. CNR (Chrominance Noise Reduction) offers High, Middle, Low, and Off positions. YNR (Luminance Noise Reduction) offers High, Middle, Low, Very Low and Off positions. Jitter and skew are eliminated at the same time to give clear, stable pictures.

A/B ROLL EXPANSION CAPABILITY

- When you've outgrown the cuts-only functionality of the machine, the EVO-9720 lends itself to A/B roll expansion capability. Both the player and recorder have RS-232 serial ports that allow for external control. They can be directly connected as Source A and B to an external computer and/or the Sony FXE-100 Video Editing System.
- To further allow configuration into an A/B roll system there are external sync input terminals for both the player and recorder. When the external sync mode is set to Auto, the EVO-9720 synchronizes itself with the incoming reference signal.

ADDITIONAL FEATURES

- To provide for smoother transitions from scene to scene, the EVO-9720 has a video fader. Black or white fading can be selected as well as a duration time of 0.5 or 2 seconds.
- There is a GPI (General Purpose Interface) output with timing adjustment for controlling external devices. External devices like the Video Toaster or Character Generators can be controlled. GPI timing of between 00 and 60 frames is selectable.

SONY

SVO-2000 S-VHS Hi-Fi Editing VCR

The new SVO-2000 is a powerful, yet easy-to-use S-VHS Hi-Fi editing recorder. Two SVO-2000 recorders combined with the optional RM-250 Edit Controller forms a cost-efficient cuts-only editing system - with full assemble, video insert, audio dub and program editing capability.

Superb Video and Audio Performance

- S-VHS format delivers 400 lines of horizontal resolution and consistent, clear image reproduction for superior results.
- Adaptive Picture Control (APC) System for optimum picture performance. In record mode, APC automatically tests an inserted tape and checks the condition of the heads. It then adjusts the VCR recording circuitry to capture images that are as clear and crisp as they can be. In Playback mode, APC automatically sets ideal balance of picture sharpness and clarity.
- Hi-Fi stereo recording system has a wide frequency response of 20Hz to 20kHz and a superb 90dB dynamic range, and individual recording level controls for the left and right channels.
- The SVO-2000 has a Control-Edit Spin remote terminal that allows it to be controlled externally. Connects directly to RM-250 for easy setup.
- With Control-S input and output terminals, two SVO-2000s can be connected for synchro editing, without the RM-250.
- Also offers program editing capability, which allows automatic sequential editing of up to 20 pre-assigned scenes.



Convenient Functions

- Both the SVO-2000 and the supplied remote control have a dual mode shuttle dial for slow motion playback, frame advance and picture search in either forward or reverse.
- Automatic repeat enables it to repeatedly playback a program. At the end of the program or the tape, the VCR automatically rewinds and restarts the program from the beginning.
- Auto head cleaner prevents head clogging which could lead to deterioration of picture quality.
- Has an on-screen set-up menu for easy set-up of tuner, clock and timer programming as well as VCR and cable box control.

SVP-5600 and SVO-5800 S-VHS Player/ S-VHS Editing Recorder

SVP-5600 and SVO-5800 features:

- By combining the high resolution (400 horizontal lines) of S-VHS with high quality signal processing techniques like DNR, Digital Field DDC and Chroma Process improvement, they deliver the consistent picture quality so essential to editing. They also incorporate a wide video head gap and track width (58mm) for stable and faithful picture reproduction.
- Each has a built-in TBC plus an advanced Digital Noise Reducer (DNR) for both the chrominance and luminance signals to eliminate noise during playback. At the same time, a field memory incorporated in the noise reducer removes jitter to provide sharp, stable pictures.
- They also incorporate Chroma Process Improvement circuitry for excellent color picture quality in the playback mode. This advanced circuitry greatly improves the chroma bandwidth, thus enabling sharper and clearer color picture reproduction.

ADVANCED EDITING FUNCTIONS

- For frame accurate editing, both machines employ a sophisticated servo system, an improved quick response mechanism and built-in LTC/VTC time code capability.
- They are equipped with industry standard RS-422 9-pin serial interface. The 9-pin connector carries edit commands and time code data between the VCR and the edit controller.
- When connected to an RS-422 equipped edit controller, the SVO-5800 functions as an editing recorder. It performs assemble and insert functions and also provides audio split editing of normal audio tracks 1 and 2. In the insert mode, video, audio and time code can be inserted independently.

FOUR CHANNEL AUDIO SYSTEM

- They each incorporate four-channels of high quality video. There are two channels with Hi-Fi (AFM) tracks and two with longitudinal (normal) tracks. The Hi-Fi tracks provide a wide frequency response from 20Hz to 20kHz and a superb dynamic range of 90dB. The normal tracks incorporate Dolby B noise reduction for high quality sound.
- MULTIPLE INPUTS AND OUTPUTS
- Both machines employ composite and S-Video connectors. With optional SVBK-170 Component Output Board, they provide component signal output through BNC connectors. With the board, the VCRs can be integrated into Betacam SP editing systems.



- USER FRIENDLY OPERATION
- They have a built-in character generator which superimposes characters on the "video monitor output" signal. This allows time code data, control track, menu setup and VCR function status to be shown on a monitor.
- For more efficient operation they have an on-screen setup menu which allows a variety of customized VCR mode operations. Programmed in the form of a layer structure, you simply go through the menu and initialize VCR operation.
- All parameters of the TBC, such as luminance level, chroma level, setup, hue, VCR delay, sync phase and S-C phase are easily controlled from the front panel, and can be remotely controlled from the optional VPR-60 TBC Remote Control.
- Quick and smooth picture search can be performed by either using an RS-422 equipped edit controller or the optional SVRM-100 Remote Control Unit. Recognizable color pictures are provided at up to 10x normal speed in forward or reverse.

EVO-9800A Hi-8 Player/Recorder/ Edit Feeder

- The EVO-9800A incorporates a built-in Digital Chrominance Noise Reducer (Digital CNR) to provide higher quality pictures. When the CNR mode is set to ON, chrominance S/N ratio is improved. At the same time, the field store used in the noise reduction process removes jitter to give clear, stable pictures.
- The EVO-9800A provides two channels of high quality PCM digital audio and a single channel of AFM. The EVO-9800A also provides balanced audio inputs and outputs via XLR connectors.
- Joystick/ Shuttle for picture search - The SHUTTLE mode provides high speed picture search of -17 to 19 times normal speed.
- Equipped with a built-in 8mm time code generator to record an absolute address on the video tape and to perform time code based editing. The 8mm time code is recorded between the video and the PCM audio tracks to identify each frame. The time code data is converted and transmitted via 9-pin (RS-422 serial) interface. If the tape was recorded with no time code, you can subsequently insert 8mm time code on the tape. Alternatively, existing time code can be overwritten with new time code.
- Dial Menu Operation for maximum ease of operation. Use the search dial to easily set various VTR operational modes; time code preset, time code superimposition, self-diagnostics display, digital hour meter information, etc.
- The EVO-9800A is 3-unit high and can be installed into a 19-inch rack by using the optional RMM-980 Rack Mount Kit.



EVO-9850 Hi8 Editing Recorder

- For enhanced picture quality, there is a built-in digital noise reducer for both the chrominance and luminance signals. In the CNR (Chrominance Noise Reducer) mode you can select low or high level of noise reduction according to picture conditions.
- Equipped with four channels of audio. Two AFM Hi-Fi stereo tracks plus two PCM digital stereo tracks. Each channel has balanced XLR inputs and outputs, plus there is individual level volumes for each track
- Assemble and insert editing modes. In the insert mode there is independent editing of video, PCM-1, PCM-2 and time code.
- Built-in TBC (Time Base Corrector). With TBC the EVO-9850 outputs highly stable video signals. A digital drop-out compensator is also built-in. TBC adjustments can also be remotely controlled with the optional BVR-55 TBC Remote Control Unit.
- Absolute frame accuracy for video editing and single frame recording. Accuracy of ±0 frames is achieved with advanced servo system, quick response mechanism and built-in 8mm time code reader/generator.
- The EVO-9850 is equipped with a built-in 8mm time code generator. Since the 8mm time code is recorded between the video and the PCM audio tracks in a separate and dedicated location, 8mm time code insertion or overwrite is possible without losing a generation. An RS-422 9-pin connector is utilized for communicating edit command and time code data. The 8mm time code is output as SMPTE time code through the RS-422 connection to the edit controller.
- With the optional EVBK-100 the EVO-9850 outputs SMPTE time code data via BNC connectors. Accordingly the EVO-9850 can feed time code to another VCR or can lock to an external time code.
- The Joystick/ Shuttle mode provides high speed picture search from -17 to 19 times normal speed.
- With the optional RMM-980, the EVO-9850 can be installed into a 19-inch EIA standard rack.
- External sync input to lock onto external reference video signals. This allows for synchronization with other video equipment.
- For customized operation there is a Dial Menu. You can set VCR operation modes like time code preset, time code superimpose, self-diagnostics display, with the search dial.



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COLOR MONITORS

PVM-1350

13" Presentation Monitor

- Employs a P-22 phosphor fine pitch CRT to deliver stunning horizontal resolution of 450 horizontal lines.
- Equipped with beam current feedback circuit which eliminates white balance drift for long term stability of color balance.
- Has analog RGB, S-video and two composite video (BNC) inputs as well as 4 audio inputs.
- Automatic Chroma/Phase setup mode facilitates the complex, delicate procedure of monitor adjustment. Using broadcast standard color bars as a reference, this function automatically calibrates chroma and phase.
- Chroma/Phase adjustments can also be easily performed with the monochrome Blue Only display.
- In Blue Only mode video noise can be precisely evaluated.
- Factory set to broadcast standard 6500K color temperature.
- Provides an on-screen menu to facilitate adjustment/operation on the monitor. The on-screen menu display can be selected in English, French, German, Spanish or Italian.
- On power up, automatic degaussing is performed.
- Also has a manual degauss switch to demagnetize the screen.
- Sub control mode allows fine adjustments to be made on the knob control for contrast, brightness, chroma and phase. The desired level can be set to the click position at the center allowing for multiple monitors to all be controlled at the same reference level.



PVM-1351Q

13" Production Monitor

- Has all the features of the PVM-1350 PLUS -
- Is also a multistandard monitor. It accepts NTSC, PAL and NTSC video signals. NTSC 4.43 can also be reproduced.
- Equipped with a SMPTE 259M Serial Digital Interface. By inserting the optional serial digital interface kit BKM-101C for video and the BKM-102 for audio the PVM-1351Q can accept SMPTE 259M component serial digital signals.
- Equipped with RS-422 serial interface. With optional BKM-103 serial remote control kit all of the monitor's functions can be remotely controlled with greater confidence and precision.
- Equipped with input terminals such as component (Y/R-B-Y), analog RGB, S-video, 2 composite video (BNC) and 4 audio terminals for complete flexibility.
- Aspect ratio is switchable between 4:3 and 16:9 simply by pressing a button.
- Under scan and HV delay capability. With under scan, entire active picture area is displayed. Allows you to view entire image and check the picture edges. HV delay allows viewing of the blanking area and sync-burst timing by displaying the horizontal and vertical intervals in the center of the screen.
- Color temperature switchable between 6500K/9300K/User preset. 6500K is factory preset. 9300K is for a more pleasing picture. User preset is 3200K to 10,000K.

PVM-1354Q/PVM-1954Q 13" and 19" Production Monitors

All the features of the PVM-1351Q PLUS:

- SMPTE C standard phosphor CRT is incorporated in the PVM-1354Q/1954Q. SMPTE C phosphors permit the most critical evaluation of any color subject. Provides over 600 lines of horizontal resolution.
- The PVM-1354Q mounts into a 19-inch EIA standard rack with the optional MB-502B rack mount bracket and SLR-102 slide rail kit same as PVM-1351Q. The PVM-1954Q mounts into a 19-inch EIA rack with the optional SLR-103 slide rail kit.

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SANYO

GVR-S950 S-VHS Single Frame Recording VCR

- Built-in single-frame Animation Controller eliminates the need for separate or computer plug-in animation controllers. Industry-standard protocols, make it compatible with most popular graphic and animation software packages.
- SMPTC Time Code Generator and Reader with Built-in Drop and Non-Drop Frame Read/Write is fully programmable from an external computer and resettable from the front panel.
- Video and Audio Switcher with Two Independent Video and Audio Channels. Each video channel contains both composite and S-Video inputs. Each audio channel contains two linear and two Hi-Fi inputs. Switching can be performed either manually, or under RS232 or RS422 control. Video and audio channels are switched independently letting you perform break-away edits.
- Auto-Sensing Single RS422/RS232 Input eliminates the need for optional external interfaces. Interface requirements are automatically sensed and adjusted within the recorder.
- Input and Playback Video Processing allows adjustments to the video level of the incoming signal. Signal levels and hue can be adjusted during playback.



GVR-S955 S-VHS Single Frame Recording VCR

All features of the GVR-S950 PLUS — The GVR-S955 contains an on board two input audio/video switcher. Unlike the GVR-S950, the GVR-S955 can be programmed via the RS-422 bus for complete audio/video breakaway editing. As a result of this "audio/video breakaway" feature, time code can be added to tapes with existing video.

JVC

S-VHS EDIT-DESK SYSTEM

BR-S500U Player • BR-S800U Edit Recorder
RM-G800U Edit Controller

Fast, accurate and professional style videotape editing is now more affordable than ever. This new "S" editing system, costing thousands less than ever before, consists of the BR-S500U Player/Recorder, the RM-G800U Edit Controller and the BR-S800U Editing Recorder. Linked via JVC's proprietary control bus, these three units offer all of the editing features professionals have come to expect. The VCRs feature a fast, heavy-duty tape drive similar to that used in JVC's renowned "22 Series", and the built-in CTL (Control Track) time code provides unparalleled accuracy and flexibility. Best of all the VCRs feature an open architecture for easy system upgradeability.



OPEN ARCHITECTURE

Two plug-in extension slots on the rear panels (for both VCRs) accept a variety of optional expansion boards. To build a PC-based editing system, add the SA-K270A RS-232C interface board. To use with more sophisticated editing controllers, plug in the SA-K26U RS-422 board. Other boards include the SA-K28UA 45-pin board for connection to older JVC editing systems, the SA-N50U DNR board with time base stabilizer, and the SA-R50U VITC/LTC time code generator/recorder.

CONTROL TRACK TIME CODE SYSTEM

Built-in time code reader (BR-S500U) and time code reader/generator (BR-S800U) utilize JVC's CTL (Control Track) Time Code System. This system records absolute tape address information (hours, minutes, seconds, frames) on the control track, and provides fast and accurate access to any frame on the video tape. This is far superior to control track counters that lose reference when the tape is removed. CTL Time Code can be added to the tape during the recording process or "post striped". For professional SMPTE time code operation there is the optional SA-R50U VITC/LTC Time Code Reader/Generator card.

SUPERB VIDEO PERFORMANCE

Has latest picture improvement technologies for razor sharp images, with over 400 lines of horizontal resolution. Digital Y/C separation, chroma noise reducer, chroma aperture correction and a 3-line cross-talk cancellation all combine to offer outstanding image quality, even when dubbing down multiple generations.

32X VARIABLE-SPEED SEARCH

Front-panel search dials featured on both the BR-S800U and BR-S500U provide fast, accurate picture search at up to 32x normal speed. This is possible due to the incorporation of a heavy-duty direct-drive mechanism similar to that used in JVC's "22 Series".

FOUR-TRACK AUDIO

Each features two Hi-Fi stereo channels with a wide frequency response and a dynamic range of over 80 dB and two linear tracks. The linear tracks of the BR-S800U can be dubbed independent of each other and of the video. This is ideal for adding background music or sound effects to an existing audio track. There are two audio level meters, switchable between the Hi-Fi and linear channels. Separate input and output terminals are provided.

RM-G800U EDIT CONTROLLER

- Has two GPIs allowing automatic triggering of special effects generators, switchers or audio mixers.
- Features automatic assemble and insert editing, as well as preview/review for checking edits before and after editing, and goto for direct access to any edit point. A capstan bump function is provided to assure greater edit consistency.
- 8-digit LED counter indicates all edit data in either the TC or CTL mode. Switchable between player and recorder.
- The RM-G800U's Jog control is precise and responsive, making it easy to locate any frame on the tape. You can enter the Jog mode directly and switch between the player or recorder at the touch of a button. The Jog dial can also be used to enter and trim edit points and pulse timing from the GPI ports.

TAC

EDITIZER 3.0

A/B Roll Edit Controller for PC or Macintosh

Hardware Features:

- 3 VCR control ports for true A/B roll. Each VCR port can support a different protocol.
- Dynamic Tracking (Slow Motion) Control provides a "fit and fill" type interface.
- Built-in SMPTE Longitudinal (Audio) Time Code generator with external & internal video sync.
- Three multi-speed SMPTE Longitudinal time code readers.
- Auxiliary serial port for full control of Newtek Video Toaster, GVG 100, and Panasonic VJ-MX50 switchers. Also Hotronic AS-11, Pinnacle Alladin and Videonics MX-1
- Audio Control: Mackie CR-1604, TAO FollowMix, Alesis ADAT
- MPC Audio & MIDI support for embedding sounds and MIDI sequences in your EDL.
- DPS TBC II & III support — you can control two personal TBC cards and the Personal V-Scope from a serial port.

Software Features:

- VCR Control — up to three VCR controllers on-screen simultaneously. Jog and shuttle control. You can use either your mouse or keyboard.
- Tape Logging — Multi-event search, copy directly into edit list, multiple log windows may be opened simultaneously. Log files or selected events may be printed to a window.

- Includes non-linear editing support
- Time code generator in Drop/Non-Drop frame.
- Multi-event controller can handle up to 16,000 events. Interactive graphical "Time Line" window. Two audio-video splits per event, cut/copy/paste events.
- Preview, Perform, Review. Automatic and manual EDL ripple.
- Optional support for AutoDesk 3D Studio, Lightwave 3D.



NEW! EDITIZER-DTC

First editing controller to directly control JVC's BR-S500U and BR-S800U (Edit Desk) VCRs. The Editizer-DTC plugs directly into their 12-pin serial bus connectors and consistently achieves accurate edits through control of the BR-S500U/800 capstan bump feature.

- TAO's 12-pin interface provides a direct line to JVC's precision-built VCRs and eliminates the need for hundreds of dollars worth of extra control boards needed in an A/B roll set-up.
- Direct connection also means that the two slots in each VCR remain free for other enhancement boards such as TBC cards.
- Editizer's time code generator window provides remote control of JVC's CTL Time Code Generator so there is no need to buy additional time code boards. Plus, this leaves both linear channels free for higher quality production work.

Panasonic



AG-1300 Industrial 4-Head VHS VCR

- HR (High-Response) mechanism uses the full-loading tape transport system for quicker picture display, fast forward and rewind.
- Enlarged multi-function display gives all information at a glance. Indications for the time, recording or playback mode and other often used functions are easy to confirm from across a room.
- S-VHS quasi playback (SQPB) let's you playback S-VHS tapes (in normal VHS resolution).
- On-screen display (in four languages) provides clear and easy to follow programming instructions.
- Industrial strength VCR, the AG-1300 features a rugged metal cabinet on an aluminum die-cast chassis. Includes full one-year warranty on parts and labor.
- Other features include: built-on head cleaner, automatic repeat, real-time counter, frame advance, high-speed search (27x in SLP mode), 181-channel tuner, one touch recording.

AG-2540

Industrial 4-Head VHS Hi-Fi VCR

- Same exact features as the AG-1300 plus—
- Super jog/shuttle puts 19-stop control over playback speed at your fingertips, giving you greater control while searching for scenes.
- Hi-Fi stereo sound system with a dynamic range of more than 90 dB.



AG-1980 S-VHS Hi-Fi Editing VCR

- Significantly higher picture quality due to digital signal processing
- Third generation picture quality has never been at this price level
- Uses Amorphous video heads which are superior to conventional ferrite heads and deliver rich, vibrant color reproduction and a high S/N ratio.
- Built-in Digital Time Base Corrector effectively eliminates jitter and distortion. Playback is high quality, stable and with natural colors.
- Two Hi-Fi stereo tracks with a frequency response from 20Hz to 20,000 Hz and a 90 dB dynamic range. (Has one linear audio track.) Also has stereo recording level control, headphone monitor terminal and mic input terminal.
- Independent input and output for the linear audio track
- Does assemble edit, video insert and audio dub. Flying erase head for smooth, clean, seamless edits.
- 5-pin edit terminal makes it easy to set up an editing system.
- Jog/shuttle Dial for varied playback from slow motion to high-speed search (shuttle) and frame-by-frame picture control in forward and reverse (Jog).
- Outputs the audio track during search operations for cueing and quick confirmation of audio recording.
- What makes the AG-1980 the perfect editing VCR? The advanced dual-loading mechanism features a quick response time, exceptional tape protection, remarkable tape control accuracy — all make for outstanding editing precision and ease.
- Automatic head cleaner removes dust and other particles from the heads to help maintain optimum performance.



AG-5700 S-VHS Hi-Fi RS-232 Editing VCR

The AG-5700 is an easy to use S-VHS Hi-Fi Editing VCR flexible enough to be used in a wide range of applications from video production to educational, medical and business. It delivers exceptional recording and playback images, plus high quality audio sound. With its platform independent RS-232C interface you can choose from a myriad of software packages to suit your applications.

- Uses amorphous video heads which are clearly superior to conventional ferrite heads. They are better because their magnetizing strength is much greater, yielding a higher signal-to-noise ratio.
- Incredibly accurate with optional AG-A570 Edit Controller, an accuracy of ± 3 frames can be achieved.
- Built-in RS-232 provides machine control of playback, recording and editing functions from a computer. You can use the power of your computer (with optional software) to assemble hundreds of scenes, create edit decision lists and do complex editing jobs.
- Currently supported by Amlinik, FutureVideo, VideoMedia, TAO, and Matrox.
- Auto Repeat function continuously replays a tape which can be cued for tape's end or when recorded material ends. Allows the AG-5700 to be used in showrooms, lobbies, or any in-store video display.
- Separate Hi-Fi (Ch 1/Ch 2) audio recording level controls with display. There is also a headphone output with volume control.
- For unattended recording there is a Sensor Recording function. When a video signal is detected the power is automatically switched on and the AG-5700 begins recording.
- Portable — weighs less than 13 lbs., is extremely compact and has a built-in carrying handle.
- User friendly design features record, play, and stop switches that are well illuminated during operation.



AG-DS840/AG-DS850

S-VHS DIGITAL Slow-Motion Editing System

- They provide clear, noise-free, high quality slow playback. Playback speed, including Digital Still is selectable in 10 steps ($\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{8}$, $\frac{1}{16}$, $\frac{1}{32}$, $\frac{1}{64}$, $\frac{1}{128}$, $\frac{1}{256}$, $\frac{1}{512}$, $\frac{1}{1024}$).
- 3-dimensional digital TBC with a correction range of one field. With the VCRs continuously retaining one field in memory, the data is used for 3-D type processing thereby providing excellent dropout compensation.
- Digital Signal Processing for improved picture quality, and for maintaining uniform picture quality during editing. A Chroma Aperture Compensation (CAC) circuit eliminates color blurring and expands chroma bandwidth. Other digital processing circuits include: Dig. Noise Reduct. (DNR) Processes Y & C signals separately to boost S/N Ratio by minimizing noise during playback.
- Digital Comb Filter: Advanced 3-dimensional system for total Y/C separation providing reduced color and luminance blurring.
- Switching Noise Mask Circuit: Eliminates noise caused by head switching during slow-mo playback.
- Employs amorphous video heads that have a higher magnetic coercivity than conventional ferrite heads. Expanded frequency response from the amorphous heads enhances picture quality by minimizing color blurring.
- Built-in LTC/VITC (Longitudinal/Vertical Interval) time code reader/generators for absolute frame accurate editing.
- Equipped with component outputs allowing easy connection to other component video equipment. This allows high quality transfer of S-VHS source material to Betacam or MII.
- IQ (Intelligent Quest) mechanism delivers precise, high-speed operation. The dual-loading system achieves high-speed response while protecting tapes and heads. The tape transport mechanism uses five direct drive motors, including two reel drive motors.
- Capstan Control System with large capstan spindle allows high-speed search at 32x normal speed (with color picture).
- 4 channel audio — 2 hi-fi stereo channels with dynamic range of 90dB as well as 2 linear channels with Dolby NR. Each audio channel has its own input (AG-DS850 only) and output with individual channel-level setting capability and uses XLR connectors.
- Provide 16.9 wide aspect compatibility, so they are fully equipped for the next generation of televisions.
- 3 rack units high, they are unbelievably compact for easy space saving installation. 19" rack-mountable with optional AG-M730.



AG-DS540/AG-DS550 S-VHS Source Player/ S-VHS Edit Recorder

The new AG-DS540 and AG-DS550 are identical to the AG-DS840 and AG-DS850 in every respect except they have no Digital Slow-Motion capability and no component output. Otherwise they are exactly the same! They are built for the budget conscience and for those who have no need for slow-motion playback. Or at the very least, for those who require slow-motion playback but certainly not on the record side. They can now purchase just a recorder without paying for capabilities not needed (eg. AG-DS840 & AG-DS550).

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BARRACUDA 4LP SERIES DISK DRIVES

Specifically designed for enhanced digital video and audio performance, the new 4LP series of Ultra SCSI drives are ideal for applications ranging from multimedia presentation to digital video editing and video servers.

- Embedded Servo Technology eliminates the need for thermal calibration, thus ensuring a continuous data stream with no housekeeping dropouts.
- With a minimum sustained data rate of 3.0MB/s, multimedia files are played back smoothly, with no interruptions.
- All drives are Ultra SCSI (SCSI-3 SPI) compliant, with transfer rates up to 20MB/s (8-bit Narrow) and 40MB/s (16-bit Wide).
- All drives rotate at 7200 rpm, have a maximum seek time of 17 to 20ms and an average latency of 4.17ms.
- All drives are 3.5" form factor & are either 1" high or half height.

| Model | Capacity | Interface |
|----------|----------|---------------|
| ST32171N | 2.15GB | Narrow (8bit) |
| ST32171W | 2.15GB | Wide (16bit) |
| ST34371N | 4.35GB | Narrow (8bit) |
| ST34371W | 4.35GB | Wide (16bit) |
| ST19171N | 9.1GB | Narrow (8bit) |
| ST19171W | 9.1GB | Wide (16bit) |

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HOTRONIC AP41 STAND ALONE TBC/ FRAME SYNCHRONIZER

- Compatible with S-VHS, Hi-8 and U-Matic SP equipment
- Frame synchronization with full frame memory synchronizes outside satellite, microwave and feeds with studio signals
- 4 times sub-carrier sampling, 8-bit resolution
- Adjustable horizontal and vertical blanking
- Proc-amp controls are presettable. Each control has a maximum useful dynamic range. Front panel buttons select different operational modes.
- Optional pixel by pixel DDC (Drop-out compensator)

AP41-SF

- Same as above plus S-Video output, freeze frame/field, Y/C adjustment and 16-speed strobe

AP41-SP

- Same as above plus wide-band comb filter (full bandwidth in all modes)



BSG-50

Blackburst/Sync/Tone Generator

The BSG-50 provides an economical means for generating the most common RS-170A video timing signals used to operate various video switchers, effects generators, TBCs, VCRs, cameras and video edit controllers.

- 6 BNC video/pulse outputs
- Now available: 6 blackburst, 4 sync, 2 subcarrier
- Each sync output individually settable for composite sync, composite blanking, H-drive, or V-drive
- Separate buffer for each output—maximum signal isolation
- 1KHz, 0dB sine wave audio tone output, locked to video
- Outputs can easily be configured to meet specific user and equipment needs

CSG-50

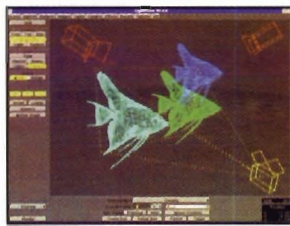
Color Bar/Sync/Tone Generator

- Generates full/SMPTE color bars, blackburst and composite sync signals
- Built-in timer can automatically switch video output from color bars to color black after 30 or 60 seconds. Easy and convenient for producing tape leaders and stripping tapes with color bars and black
- Front panel selection of full-field or SMPTE color bar patterns or color/black (blackburst) video output
- Includes crystal-controlled, 1KHz, 0dB audio tone output
- Outputs: video, sync, ref frame, 1 KHz, 0dB
- Audio tone switches to silence and color bars change to black when using 30/60 second timer
- Fully RS-170A SC/H phased and always correct
- No adjustment required



The Ultimate 3D Rendering and Animation System for Broadcast Graphics

LightWave 3D is an all-in-one photo-realistic animation system. As part of the Emmy-award winning Video Toaster, LightWave 3D has been used in television shows such as seaQuest DSV, Babylon 5, Hercules and Star Trek: The Next Generation and Voyager. LightWave is also used by tens of thousands of people to create graphics for corporate videos, commercials, video games, print graphics and much more. LightWave 3D provides a comfortable, intuitive working environment that draws a real-world metaphor between an actual soundstage and your personal computer. Within LightWave Layout, create dramatic lighting effects, photo-realistic surface materials and intricate camera movements. Render still images or entire animations in 24-bit color. Create new props with the powerful tools in LightWave Modeler. From technical geometric forms to free-flowing organic shapes this model shop does it all. LightWave 3D's new plug-in architecture is supported by a growing number of independent developers. This allows you to customize LightWave with additional features such as gravity, particle systems, image processors, and more surfaces.



FEATURES:

- Inverse Kinematics allows creation of complex character animation more quickly. It makes animating more like puppeteering.
- Incredibly powerful modeler with new Metaform function that will transform rough geometry into organic looking objects
- Reads (and writes) JPEG, IFF, GIF, TIFF, BMP, FLC, CINEON, and many more image formats through Elastic Reality's Host Independent Image Protocol.
- Robust plug-in architecture gives other developers control over LightWave 3D to add additional features, such as gravity, image processing, or new modeling tools.

- Full Ray Tracing rendering including shadows, reflection, and refractions for ultra realistic imagery.
- Nearly all attributes of your scene can be animated through an easy-to-use key frame interface, or with envelope controls. You can animate lights, lens flares, textures, objects, even camera attributes such as zoom or depth of field
- LightWave 3D includes a CD-ROM packed with license free objects, images, textures, and scene files created by the pros from seaQuest DSV, Babylon 5, and many other television shows.

DIGITAL PROCESSING SYSTEMS INC.

VT-2600 Personal TBC IV

- Component digital transcoding provides S-Video input and output. Digital 4:2:2 processing ensures the cleanest possible picture. Composite video signal is also enhanced by a newly developed chrominance comb filter.
- It interfaces virtually any camcorder, VCR or laser disk player to production switchers or computer video systems like the Video Toaster.
- Features Rock Solid Freeze (field and frame), GPI Freeze, Variable Strobe, Forced Monochrome and Advanced Sync.
- Film Effect Strobe Mode - Simulates the 3-2 pull down conversion technique from a 24 frame per second film standard, to a 30 frame per second video standard.

- Can be installed in any Amiga or PC-compatible computers. Includes Amiga and MS-DOS software.
- Has a 50-pin CVC (Component Video Exchange) port. When connected to the DPS Personal Animation Recorder you can capture and record real-time video on the animator's dedicated hard drive. This combination is ideal for rotoscoping and other video capture processes.
- Fully compatible with TBC II, III and Personal V-Scope. The TBC IV is operated via software, or by using an optional DPS RC-2000 multi-channel desktop controller.

DR-2150 Personal Animation Recorder

- Offers multiple outputs: Can output animation as composite, S-Video and component (Betacam or MII). Also includes a genlock input which enables it to be easily integrated with virtually any video production system.
- Variable speed playback lets you play back 24-bit (16.7 million colors) animation in real-time 30 frames per second, or you can choose a lower frame rate to play back animations in slow motion.
- Supports direct rendering of all common image formats including 24-bit IFF and Video Toaster frame store files and is fully compatible with all popular animation packages including Morph Plus, LightWave 3-D, Fractal Pro, Imagine, Vista Pro, and Cinema 4D.
- Real-time video capture for roto-scoping and other video capture applications is possible when used in combination with a DPS TBC IV card.

- Component digital transcoding provides S-Video input and output. Digital 4:2:2 processing ensures the cleanest possible picture. Composite video signal is also enhanced by a newly developed chrominance comb filter.
- It interfaces virtually any camcorder, VCR or laser disk player to production switchers or computer video systems like the Video Toaster.
- Features Rock Solid Freeze (field and frame), GPI Freeze, Variable Strobe, Forced Monochrome and Advanced Sync.
- Film Effect Strobe Mode - Simulates the 3-2 pull down conversion technique from a 24 frame per second film standard, to a 30 frame per second video standard.

DPS PVR-2500 Perception Video Recorder

A successor to the immensely popular PAR (Personal Animation Recorder) the PVR-2500 offers powerful features for awesome animation, morphing and rotoscoping capabilities. With features like PCI bus interface, 720x480 resolution, 10-bit 2x oversampled video encoding, better than O1 scaling, component and S-Video outputs, multi-processor support and FAST SCSI-2 hard drive controller, Perception empowers your computer to rival the finest professional production studios.



- The PVR-2500 is a full-length PCI card with a SCSI-II interface which connects to one or up to seven dedicated hard drives. Because the SCSI controller is integrated with the PVR-2500, video data never has to move over the PCI bus during playback. This avoids the bottlenecks found in systems which use the computer's hard drive for video storage.
- Perception is designed to run under Windows NT 3.5 on computers employing 486 (DX2-66 or higher) Pentium, DEL ALPHA or MIPS processors. Perception's software utilizes Windows NT's native support for multitasking and multiple processors, allowing use with the most powerful computers available today.
- Perception gets animations out of your computer quicker and easier. Its exclusive multi-format virtual file system ensures complete integration with your existing Windows NT applications. Any acquired video or computer generated Perception video clips appear simultaneously in any different file formats including TARGA, SGI, BMP and IFF.
- Perception is compatible with all the new NT versions of LightWave 3D, Autodesk 3D Studio, Crystal Graphics TOPAS 5.1 Professional, Microsoft Softimage, Elastic Reality and others.
- Video output section utilizes 10-bit 2x oversampled encoding and provides broadcast quality CCIR-601 (720x480) resolution. Perception's dynamic range is in excess of O1 scaling so that images appear more vibrant, have more color and greater spatial resolution than ever before. Component, composite and S-Video outputs are provided via the included breakout cables.
- Perception can also control BVU protocol VCRs for video acquisition. VCR-like controls on the Perception GUI simplifies the task of batch digitizing and recording. In this mode, the PVR-2500 can read SMPTE time code from the source deck.

- Can be used with any Windows NT compatible sound card. Synchronization of audio and video is maintained by the PVR software. Some sound cards, such as those made by Turtle Beach, provide accurate system timing and consistently maintain synchronization during long video clips. Captured audio is stored on the computer's system hard drive, not on the dedicated drives. This approach provides maximum flexibility for manipulating audio and video during editing.
- Perception can perform real-time interpolation of 30 fps video to 24 fps film rates or convert vice versa. This means that it is also at home on the Hollywood movie set as well.
- Software for Windows 3.1 is supplied as well. Third party editing software such as Adobe Premier or InSync RAZOR can be used. In fact, a system equipped with the PVR-2500 and the AD-2500 capture card, a sound card, editing software and one or more SCSI hard drives becomes a non-linear editor of unparalleled performance at an unbeatable price.
- Coupled with the optional AD-2500 video capture daughter-card, Perception becomes a digital video recorder. It has component, composite and S-Video inputs for real-time recording. It delivers unsurpassed picture quality and storage capacity is limited only by the size and number of attached SCSI hard drives. Captured video can also be exported as sequential RGB files for rotoscoping and other compositing applications.
- The AD-2500 incorporates a sophisticated automatic entropy prediction circuit that analyzes the content of incoming video and dynamically calculates the optimum amount of compression on a field-by-field basis—even during real-time recording. You also have complete manual control over compression level/quality settings.

PROFESSIONAL VIDEO TAPE



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- Delivers laser-quality 600 x 300 dpi text—in color or B&W.
- LocalTalk port or Centronics-type parallel interface for Windows and Amiga. Ethernet is available for Macintosh.
- Apple's ColorSync color matching software is also supported.
- Available for PC, Macintosh and Amiga platforms. Third party drivers are also available for Auto Desk, ADI, Unix and others.
- Optional Adobe Postscript Level 2 for compatibility with nearly all page design, illustration and desktop publishing programs.
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SAMSON

MR-1 Wireless System

- The MR-1 micro receiver is a professional VHF wireless receiver measuring less than 4" long and 2" wide.
- FCC licensed in 14 channels from 174 MHz to 213 MHz.
- Truly switchable balanced mic level (600 ohms) to unbalanced (-10 dBm) output.
- dBx noise reduction to simultaneously increase dynamic range and eliminate noise.
- Receiver squelch, level & headphone level output controls.
- Can be powered by a 9V battery for 10 hours.
- SH-2 hand-held transmitter can be used with mic elements like Shure SM 58 dynamic mic or Audio Technica Pro 4.
- ST-2 (L) body pack transmitter can be used with leading lavalier mics like Sony ECM-144 or Audio Technica B31.

Lavalier (clip mic) Systems

- ST-2(L)ECM-144 Transmitter with Sony mic & MR-1 Receiver **367.95**
- ST-2(L)ECM-44 Transmitter with Sony mic & MR-1 Receiver **419.95**
- ST-2(L) AT 831 Transmitter with Audio Technica unidirectional mic & MR-1 Receiver **419.95**

Hand-Held Systems

- SH-2/PR4 Audio Technica Dynamic mic element & MR-1 Receiver **369.95**
- SH-2/58 Shure SM58 Dynamic mic element & MR-1 Receiver **434.95**
- SH-2/85 Shure SM-85 condenser mic element & MR-1 Receiver **592.95**

SUPER TD SERIES TRANSMITTERS

For the serious professional who wants true step-up quality features. Lavalier (clip mic) systems each includes:

MR-1 Micro Receiver, TX-3 Body-Pack Transmitter, Lavalier Mic with Multi Pin Plug

- Sony ECM-144 **507.95** Sony ECM-44 **544.95**
- Sony ECM-55 **653.95** Sony ECM-77 **724.95**
- Senheiser MKE-2 **747.95**

SENNHEISER



MKE-300 Shotgun

- Lightweight electret condenser mic to support the excellent video capabilities of most camcorders with the superior audio they deserve.
- Ideal for mounting on camcorders with an integrated shoe assembly and an extremely lightweight compact design.
- Tight, supercardioid polar pattern has the ability to pick up only those sounds that correspond to the scene being filmed and rejects any disturbing ambient noise.
- Integrated wind screen eliminates handling and wind noise.
- Operating time of over 200 hrs. using its own built-in battery so will not put added strain on your camcorders already limited power supply **179.95**

K6 MODULAR ELECTRET MULTIMIKE SYSTEM

This rugged system has separate capsules and a powering module that can be combined to produce a wide variety of microphones. It converts quickly from one type of microphone to another by simply threading together various system components. All capsules use back-electret technology for uncompromised quality. Output of the powering modules is balanced, low impedance (200V) and terminates in a standard 3-pin XLR connector. The K6 series was designed to bring studio quality sound to the broadcast and field recording market. The K6 power supply can accept microphone capsules ranging in polar pattern from omnidirectional to highly directional shotgun, as well as special application lavalier microphones.

K6

Microphone handgrip and power supply capable of battery/phantom powering all microphone capsules in this series. One "AA" battery supplies power for approximately 150 hours or phantom power (12-48 volts). The K6 power supply has an integrated bass roll off switch and on/off switch with LED indicator for battery condition **219.95**

ME 66

Short shotgun capsule. All sound coming from the rear and sides of the ME66 is greatly attenuated, thus allowing this microphone to pick out specific sounds in noisy environments. Great for interviews in crowded situations, as a camera microphone for electronic news gathering (ENG), for unobtrusive theater sound reinforcement and as a podium mic. Frequency response: 50-20KHz ± 2.5 dB **209.95**
ME66 with K6 Powering Module **429.95**

ME64

Cardioid capsule. Feedback resistant due to its well defined directional polar pattern. This feature, as well as its extended frequency response, make this microphone capsule ideal for use in sound reinforcement or recording in noisy environments. Frequency response: 50-20KHz ± 2.5 dB **139.95**
ME64 with K6 Powering Module **369.95**

ME62

Omnidirectional capsule. Very broad and smooth frequency response, without proximity effect. Its low handling noise and integrated pop screen make it ideal for interviews and live recording. Frequency response: 20-20KHz ± 2.5 dB **139.95**
ME62 with K6 Powering Module **349.95**

lowel

VIP Video Lighting System

Designed for video, they are capable of 55 to 500 watts of power, can be powered AC or DC, camera or stand mountable. They are all convection cooled and some have adjustable light beam.



i-light

The tiny i-light provides fill light, eye-light, high-lights, and contrast control in news and documentary shooting.

- Multi-use halogen source
- 55 or 100 watt, DC powered light (12 or 14 volts)
- Includes cigarette lighter connector or optional 4-pin XLR

Optional controls include expandable barndoors, scrims, diffuser, dichroic filter, snoot, umbrella, gel-frame, flags.

V-light

Efficient enough to light a small room yet small enough to fit in a large pocket, the V-light can be used as a broad, key light, back light or fill light (with umbrella or gel).

- Extreme wide-angle multi-use halogen source
- 500 watt, AC powered light
- Mounts on stand, clamps, boom, wall, window, door-top.

Pro-light

Can be used as a low-level key or accent light, fill light (with diffusion), backlight or background light.

- Multi-use halogen focusing source
- 125 and 250 watt AC powered light or 100 watt at 12 volts
- Optional controls - expandable barndoors, scrims, diffuser, dichroic filter, snoot & umbrella, gel-frame & flags.
- Optional cigarette, 4-pin and 5-pin XLR connectors.

MACKIE



Micro Series 1202 VLZ 12-Channel Ultra-Compact Mic/Line Mixer

Usually the performance and durability of smaller mixers drops in direct proportion to their price. Fortunately, Mackie's fanatical approach to pro sound engineering has resulted in the Micro Series 1202 VLZ, an affordable small mixer with studio specifications and rugged construction. The 1202 VLZ is a no-compromise, professional quality ultra-compact mixer designed for professional duty in broadcast studios, permanent PA applications and editing suites where nothing must ever go wrong.

CR-1604 16-Channel Mic-Line Mixer

The hands-down choice for major touring groups and studio session players, as well as for broadcast, sound contracting and recording studio users, the Mackie CR-1604 is the industry standard for compact 16-channel mixers. The CR-1604 offers features, specs, and day-in-day-out reliability that rival far larger boards. It features 24 usable line inputs with special headroom/ultra-low noise Unityplus circuitry, seven AUX sends, 3-band equalization, constant power pan controls, 10-segment LED output metering, discrete front end phantom-powered mic inputs and much more.

AZDEN

PRO SERIES VHF WIRELESS MICS

The AZDEN PRO SERIES brings you high performance VHF wireless at a price you can afford. Built around a two-channel design they allow selection of a frequency for the cleanest signal - delivering clear, reliable RF performance for up to 250 feet. The Pro Series includes handheld and lavalier mic systems as well as the WMS-PRO which includes a lavalier and handheld mic.

They All Feature:

- All have two switchable frequencies - 169.445 and 170.245 MHz and a range of 250 ft.
- High performance VHF transmitters and receivers incorporating SMD (solid mounted device) technology
- Compact receivers which connect to the camera's external mic jack and attach to the camera with supplied shoe mount or velcro
- LED indicators for battery condition, transmit and receive operation

COMPLETE SYSTEMS WMS-PRO

- Professional VHF wireless system with 250 ft. range
- Two switchable frequencies (169.445 and 170.245 MHz)
- Includes handheld and lavalier mic for extra flexibility
- Compact transmitter attaches to belt or fits in a pocket
- Includes earphone monitor and leatherette carrying pouch
- Battery-powered receiver comes with belt-clip, velcro and shoe mount for added versatility **169.95**

WLX-PRO

- Sensitive lavalier mic with attached tie clip
- Lightweight belt-pack transmitter with two frequencies
- Includes wind screen, earphone monitor, shoe mount and velcro **159.95**

WHX-PRO

- Handheld microphone with built-in transmitter
- Operates on one AA battery for up to 8 hours
- Has a combination on/off-mute switch for quiet switching
- Includes shoe mount, velcro, earphone monitor **199.95**

PRO SERIES COMPONENTS WL/T-PRO

- Lavalier mic with belt-pack transmitter
- Same as WLX-PRO except without receiver
- Owners of the WHX-PRO can combine the WL/T-PRO and have a complete system of handheld and lavalier mic/receiver **109.95**

WM/T-PRO

- Combine it with the receiver from the WMS-PRO or WLX-PRO and you now have the ultimate quality microphone for interviews or pass around
- 3-position switch for on, off and "standby" for quiet switching
- Choose from 2 switchable frequencies **129.95**

WR2-PRO

- New receiver allows use of any 2 Pro Series mics simultaneously
- Each transmitter can be up to 250 ft. from the receiver or more.
- Size of a cigarette pack the WR2-PRO mounts on a camera with supplied shoe mount or velcro
- Operates on a 9 volt battery and with optional adapters on 12 volt DC or 120 volt AC **199.95**

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NRG

POWER BELT SERIES

NRG power belts are the ultimate power solution. They provide the power to run lights, camcorders and decks without the fear of shutdown. Advanced high-density nicad power cells provide the lightest weight and longest service life of any power products made. Innovative features such as dual power outputs, power indicator, removable packs, plus accessories like high-speed chargers, solar panels and high-current cables combine to form the complete power solutions for any kind of users.



880 Power-Pro +

- High capacity quick-charge capable 12-volt 10-amp sintered nicad power pack (removable).
- Power chassis with dual 3-pin XLR inputs allows for pack interchange without shutdown.
- 2500-cycle cell life provides lowest cost per cycle.
- Microprocessor-controlled 5-step multi-color power indicator display.
- Belt with cellpack weighs only 4.9 lbs for all day comfort.
- Dual outputs allows simultaneous powering of two devices (eg. camera and light). Output configurations include cigarette lighter and 4-pin XLR in any combination.
- Charge in under 2 hours with the optional 650-ill charger.
- Includes Power-Pro belt and power chassis, 12-volt 10-amp cell pack, model 800 overnight charger and comprehensive owner's manual. Fits waist size 30" - 40". (Available in large size 40"-52" if needed).

970 Power-MAX

- Same features as 880 Power-Pro + Belt Plus
- Highest capacity quick-charge capable 12-Volt 14-AMP sintered nicad power pack (removable).
- Rugged high-grade, black leather belt case; chassis assembled with dual 3-pin XLR inputs for pack interchange without shutdown.
- Belt with cellpack weighs a comfortable 7.5 lbs.
- Includes Power-MAX belt and power chassis, 14-amp cell pack in 12V or 13.2 volt configuration, model 800 overnight charger, comprehensive owner's manual. Fits waist size 29"-44".
- Also available in 13.2-Volt 14-amp version. The 13.2-Volt version offers 15-20% longer runtimes because industrial VCRs shut off at higher voltage levels. By not shutting off the Power-MAX is allowed to fully discharge, thus the longer running time.

VARA-LITE PRO

Professional DC On-Camera Light

The revolutionary new NRG Vara-Lite Pro combines the ruggedness, light efficiency and versatility of NRG's best selling VersaLight Pro (DC only) with a sophisticated electronic light management system. Thanks to on-board control IC's using NRG's Light-Gate technology, light intensity can be infinitely adjusted by the user within a range of 10% to 100% of the lamp's rated power. Now instantly adjust light output to exactly meet changing light requirements. Best of all, the Vara-Lite Pro virtually eliminates color shift and dramatically conserves precious battery power by using only the power required for the selected light level.



- Accommodates bulbs from 20W to 100W DC.
- Prismatic dispersion grid provides smooth even light output and reduced glare without changing light intensity.
- Sturdy all-metal click tilt mounting bracket with ratchet action. Eliminates shake under action shooting conditions.
- Optional barn doors enhance light control capabilities.
- Front retainer assembly pops off for instant bulb access without the bother of screws.
- Rugged milled aluminum light head disperses heat and provides years of service under adverse conditions.

POWER STATION-2 SERIES

Just plug the PowerStation-2 into any AC outlet in the world and out comes perfectly regulated 12-volt DC power through four 4-pin XLR connectors and one cigarette lighter connector. It uses an advanced pulse-width-modulated power supply which allows for ultra-light weight and small size. It operates with little heat even at full output. The PowerStation-2 is the ultimate multiple-output professional power source for cameras, decks, lights, monitors, and a host of other video accessories.



- 85-264 volts worldwide auto-adjusting input (just plug in).
- Supply is fully protected from overcurrent.
- Ultra-light weight - under 3 lb.
- Outstanding 300,000 hour mean time between failure is far in excess of any other manufacturer.
- Ultra-efficient PWM regulation generates far less heat than linear type supplies.
- Provides the ultimate in performance and reliability in a universally compatible and compact package.

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| Personal VScope | 735 |
| Personal Compnet Adapter | 229 |

Macro Systems WARP ENGINE

- Includes SCSI I & II Fastest hard drive controller available for the Amiga 4000/3000
- Up to TEN megabytes per second with a Seagate Barracuda 2.1 gigabyte hard drive
- Expandable to 64MB (3000) or 128MB (4000) using 72 pin industry standard simms

| | | | | | |
|-----------------------|--------|------|---------------------|--------|------|
| 68040 @ 28Mhz w/o CPU | (4028) | 799 | 68040 @ 28Mhz w/CPU | (3028) | 895 |
| 68040 @ 33Mhz w/CPU | (4033) | 999 | 68040 @ 33Mhz w/CPU | (3033) | 999 |
| 68040 @ 40Mhz w/CPU | (4040) | 1199 | 68040 @ 40Mhz w/CPU | (3040) | 1199 |

Low profile, power & heat simms for maximum performance -

Upgrade rebates for A4000-040 owners with original CPU card & four mb simms & A3000 owners with zip style dram

| | |
|------------|-------|
| 04 MB 60NS | \$149 |
| 08 MB 60NS | \$299 |
| 16 MB 60NS | \$499 |
| 32 MB 60NS | \$999 |

SYQUEST (Amiga / MAC / IBM)

| | |
|--|-----|
| 5.25" HH 44MB DRIVE (SQ555) SCSI | 149 |
| 5.25" HH 88MB (SQ5110C) (R&W44) SCSI | 259 |
| 3.5" LP 135MB IDE or SCSI w/Cartridge | 249 |
| 5.25" HH 200MB (SQ5200) (R&W 44888) SCSI | 349 |
| 3.5" LP 270MB SCSI (SQ3270S) 13MS SCSI | 329 |
| 5.25" 44MB Cartridges | 41 |
| 5.25" 88MB Cartridges | 51 |
| 3.5" 105MB Cartridges & 270MB Cartridges | 59 |
| 5.25 200MB Cartridges | 79 |
| External Versions w/Cabling Add | 99 |

SCSI CD-ROM DRIVES & DRIVERS

| Model | Buffer Size | Access | Rate | Amount |
|------------------------|-------------|--------|----------|---------|
| Hitachi External | 64k | 320MS | 150k/sec | 89 |
| Sanyo Int / Ext | 256k | 380MS | 300k/sec | 149/199 |
| NEC 3Xi Int / Ext | 256k | 195MS | 450k/sec | 199/249 |
| NEC 4XPro External | 256k | 120MS | 600k/sec | 299 |
| Sanyo 4x Int / Ext | 256k | 120MS | 600k/sec | 239/299 |
| Toshiba 4.4x Int / Ext | 256k | 120MS | 660k/sec | 329/379 |
| Plexstor 4x Int/Ext | 1024k | 120MS | 600k/sec | 415/465 |
| Plexstor 6x Int/Ext | 256k | 145MS | 900k/sec | 449/499 |

ASIM CDFS 3.3+ w/Fish CD (AMIGA)

64

CSA DERRINGER+ ACCELERATOR

68030@25Mhz CPU w/MMU
68881@25Mhz FPU & 1MB Ram

Only 299.00
w/4MB 399.00 w/8MB 599.00

CSA DERRINGER+ ACCELERATOR

68030 @ 33MHZ with MMU
68882 @ 33MHZ (Math Co Processor)
1Megabyte of 32bit ram (remap kickstart)
Install up to 32MB of 72 pin industry standard ram
Ours is the only one to come standard with the modification to work with the DKB Megachip (a \$25.00 value if purchased separately)

4MB - 499 8MB - 699 16MB - 999 32MB - 1499

68030 @ 50MHZ with MMU

68882 @ 50MHZ (Math Co Pro add 99.00)
1Megabyte 60NS 32bit ram (remap kickstart)
Install up to 32MB of 72 pin industry standard ram
Ours is the only one to come standard with the modification to work with the DKB Megachip (a \$25.00 value if purchased separately)

4MB - 599 8MB - 699 16MB - 1099 32MB - 1599

WORKS IN AMIGA 2000 & 500

CONNER 1060 SCSI I & II

*** BLOWOUT SPECIAL ***

9 MS - 1060MB - 5 Year Warranty

up to 10 MB/Sec Synchronous
up to 5 MB/Sec Asynchronous

Works great with all controller cards!

\$295.00

3.5" HARD DRIVES

Quantum

| | | | |
|-----------------------------|---------|-------|----------------|
| 340 ELS SCSI I & II or IDE | 11MS | 2 Yrs | 149 |
| 540 ELS SCSI I & II or IDE | 11MS | 2 Yrs | 179 |
| 730 LPS SCSI I & II or IDE | 11MS | 2 Yrs | 199 |
| 850 LPS SCSI I & II or IDE | 14MS | 3 Yrs | 239 |
| 1080 LPS SCSI I & II or IDE | 12MS | 3 Yrs | 295 |
| 2.1G Capella 5400RPM | 512k | 8MS | 5 Yrs 675 |
| *2.1G Atlas | 7200RPM | 1MB | 8MS 5 Yrs 849 |
| *4.3G Atlas | 7200RPM | 2MB | 8MS 5 Yrs 1299 |

Seagate

| | | | | |
|------------------------|----------------|------|-------|------|
| ST3145A | 120MB IDE LP | 16MS | 1 Yrs | 99 |
| ST3290A | 260MB IDE LP | 16MS | 3 Yrs | 159 |
| ST3491A | 420MB IDE LP | 16MS | 3 Yrs | 169 |
| ST31220A | 1080MB IDE LP | 9MS | 3 Yrs | 249 |
| - A4000 Autoboottable! | | | | |
| ST31230N | 1050MB SCSI LP | 9MS | 5 Yrs | 375 |
| ST32550N | 2.1G Barracuda | 8MS | 5 Yrs | 975 |
| *ST15150N | 4G Barracuda | 8MS | 5 Yrs | 1299 |
| *ST410800N | 9G Elite | 11MS | 5 Yrs | 2295 |

Quantum 4.3GB SCSI I & II

512k Buffer - 3.5" - Grandprix
8.5 MS ACCESS 5 Year Warranty 999.00

Micropolis

| | | | |
|-------------------------|-------|-------|------|
| 2217 AV 1.7G SCSI I&II | 10MS | 5 Yrs | 899 |
| 2217A 1.7G IDE | 10MS | 5 Yrs | 899 |
| *3221S 2.1G SCSI I&II | 8.9MS | 5 Yrs | 999 |
| *3221 AV 2.1G SCSI I&II | 8.9MS | 5 Yrs | 999 |
| *3243S 4.3G SCSI I&II | 8.9MS | 5 Yrs | 1299 |
| *3243 AV 4.3G SCSI I&II | 8.9MS | 5 Yrs | 1399 |
| *1991 9.0G SCSI I&II | 12MS | 5 Yrs | 2199 |
| *1991 AV 9.0G SCSI I&II | 13MS | 5 Yrs | 2299 |

Conner

| | | | |
|-----------------------|------|-------|-----|
| CFA 1275A IDE (w/PAR) | 12MS | 3 Yrs | 399 |
| CFA 850A IDE | 12MS | 3 Yrs | 265 |
| CFP 540A IDE | 12MS | 3 Yrs | 199 |
| CFA 540A IDE (w/PAR) | | 3 Yrs | 225 |

* Video Flyer Certified Drives

Hard Drive Controllers

| | |
|---|-----|
| Commodore A2091 w/0MB Ram | 199 |
| (For the A2000) w/2MB Ram | 279 |
| - Includes 7.0 Roms & WD rev 8 SCSI chip | |
| two megs of additional ram can be added | |
| Trifecta 500 LX w/0MB expandable - 8mb | 225 |
| - Controls seven scsi & two ide drives at the same time. Fastest transfers for A500 | |

A1200/600/SX1 2.5" IDE HARD DRIVES

| | |
|-----------------------|-----|
| ST9096A 80MB Seagate | 75 |
| ST9150A 130MB Seagate | 99 |
| ST9190A 170MB Seagate | 125 |
| ST9240A 210MB Seagate | 169 |
| ST9300A 260MB Seagate | 239 |
| ST9550A 455MB Seagate | 339 |
| ST9655A 520MB Seagate | 349 |

Install kits available \$25.00

AMIGA NETWORKING

| | |
|--|-----|
| AMERICAN NETWORKING | |
| Interworks ENLAN-DFS (Five node licence) | 299 |
| CBM A2065 Ethernet board | 299 |
| CEI 4066 ETHERNET PLUS | 299 |
| Three network interfaces for 2000,3000,4000 | |
| - 10 BASE T, Thick AUI, Cheapernet (10BASE2) | |
| - Diagnostic LEDs & 1 Year Warranty | |
| - 10MB/SECOND&is SANA II compliant | |

EXPANSION SYSTEMS

HIGH FLYER

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| Standard | 295 |
| With Power Supply | 395 |
| Fan Kit | 35 |
| Cable Kit | 65 |
| Dataflyer SCSI Card 4000SX | 90 |
| - SCSI Controller card supports up to seven devices internally, can add external port later | |
| Dataflyer SCSI Card 4000SX-25 | 100 |
| - Includes the DB 25 external connector for external devices | |
| Dataflyer SCSI + A4000 | 119 |
| - Converts IDE Header into SCSI support for SCSI devices w/ pass thru to work with original IDE drives you already own! | |
| Dataflyer SCSI + A1200 | 99 |
| - Same thing for the A1200 series systems | |
| Dataflyer XDS 1200 / 600 | 69 |
| - External case supports 3.5" IDE hard drives & allows use of original 2.5" hard drive. Connector also uses power from inside the machine. | |
| Ramboard w/2MB Ram exp to 8MB | 199 |
| Dataflyer 2000 SCSI | 95 |
| - Supports up to seven scsi devices, internally mount a 3.5" hard disk drive onto controller card | |
| Dataflyer 2000 IDE | 95 |
| - Support two IDE devices, one can be mounted onto controller card. | |
| Dataflyer 2000 SCSI & IDE | 125 |
| - Two controllers in one card! Support seven SCSI and two IDE devices! | |
| Dataflyer 500 SCSI | 149 |
| - Supports Seven SCSI devices, one can be mounted internally and powered! | |
| Dataflyer 500 IDE | 149 |
| - Supports two IDE devices, one can be mounted internally and powered. | |
| Dataflyer 500 SCSI & IDE | 179 |
| - Supports two IDE devices, one can be mounted internally & seven scsi devices can be connected! | |

VILLAGETRONIC

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|---|-----|
| MainActor Professional | 79 |
| - Full featured animation program that works with all Amigas with support for Picasso II owners. | |
| Ariadne | 299 |
| - Zorro II Ethernet card offering 10base-2 (cheapernet) & 10base-T (twisted pair) Features; 2 parallel ports 32k buffer; boot eeprom option; SANA-2 Compatible drivers & Envoy network software; DOS 2.04 or higher required. | |
| Liana Network | 89 |
| - Connects any two Amigas together via the parallel port | |
| Pablo | 179 |
| - A video module for your Picasso II card permitting output to your TV or VCR - Quality comparable to high performance video broadcast encoders; includes RCA - S-VHS - SCART cables & 24 bit animation program | |

Micro R&D

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|-----------------------------|-----|
| 2000 Bigfoot Power Supply | 159 |
| 1200/600/500 Bigfoot | 89 |
| Slingshot A500 (1A2000Slot) | 39 |
| Slingshot Pro A500 | 69 |
| X-Calibur A4000 Ram Unit | 649 |

ICD

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| AdiDE 130MB HD System w/2.5" Drive (500/2000) | 225 |
| AdiDE 170MB HD System w/2.5" Drive (500/2000) | 249 |
| Flicker Free Video II | 249 |
| ADRAM540 w/4MB (A500) | 275 |

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| Conner Internal 400k/sec | 899 |
| Conner External 400k/sec | 999 |
| Sony Internal 500k/sec | 899 |
| Sony External 500k/sec | 999 |

A2000 68060 @ 50MHZ !!!

DKB's WILDFIRE 060 w/FAST SCSI II & 64bit ramboard \$1499

Low profile, power, heat simms for maximum performance -

| | |
|---|------------|
| Upgrade rebates available for owners of other accelerator boards & ram through De Vine. | 04 MB 149 |
| | 08 MB 299 |
| | 16 MB 599 |
| | 32 MB 1099 |

- True 68060 50Mhz Design - NOT A MODIFIED 68040 BOARD !!!
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- Supports Posted Writes to Motherboard
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- Over 90% of the CPU available at full Speed SCSI DMA
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- PCI Bus For Future Expansion supporting up to 100MB/Second
- Compatible with the Newtek Video Toaster & DKB Megachip
- Includes Manufactures TWO year full warranty

From A Company that listens to what the public wants! This is the FASTEST accelerator available for the Amiga 2000!

Committed to the Amiga marketplace since 1980 & going strong!

CSA MAGNUM 68040 @ 40MHZ

- for the Amiga 2000 series machines
- faster than a Macrosystems Warp Engine @ 40Mhz
- uses standard 72pin simms expandable to 64 MB of memory
- 1MB SRAM Option available
- Extra Serial Port Option Available
- Built In SCSI I & II HD Controller Card

Limited time price of \$1099.00

VIDEO TOASTER SYSTEMS

CBM Amiga 4000T Motherboard, Case, Power Supply, slotboard, Floppy Disk Drive, Mouse, Keyboard & 6MB Memory 68040 @ 25mhz Processor, 1000MB Hard drive 2595

| | |
|---|------|
| Processor Options - | |
| Macrosystems Warp Engine 4028 w/CPU, SCSI I&II Controller | 895 |
| Macrosystems Warp Engine 4033 w/CPU, SCSI I&II Controller | 999 |
| Macrosystems Warp Engine 4040 w/CPU, SCSI I&II Controller | 1199 |

| | |
|--|------|
| Memory Options - (Minimum of 8MB Fast Memory needed) | |
| 1x32 Simms 60ns 4MB | 119+ |
| 2x32 Simms 60ns 8MB (warp engine or extra ramboard) | 239+ |
| 4x32 Simms 60ns 16MB (warp engine or extra ramboard) | 499+ |
| 8x32 Simms 60ns 32MB (warp engine or extra ramboard) | 999+ |

| | |
|------------------------------------|------|
| Newtek Video Toaster 4.0 | 1975 |
| Newtek Video Flyer | 3945 |
| - 2.1 GB Quantum Atlas Video Drive | 849 |
| - 4.3 GB Quantum Atlas Video Drive | 1299 |
| - 9.0 GB Seagate Elite Video Drive | 2295 |

Seagate Barracuda 2.1 GB HD

7200 RPM! - 8MS!
Five Year Warranty! \$975

USRobotics Modems

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External Sportster 28.8kbps v.34 data; 14.4kbps class 1 & 2 fax v.42/v.42bis quicklink II s/w \$299

AMIGA Lightwave 4.0
stand alone Version
\$775.00

REMOVABLE MEDIA
SCSI DEVICE CLOSE OUT

Richo 50 MB Removable HD
99.00

AMIGA RAM BOARDS

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| Paravision MBX1200Z w/20Mhz&1MB | 159 |
| Paravision MBX1200Z w/20Mhz&2MB | 199 |
| Paravision MBX1200Z w/20Mhz&4MB | 299 |
| Paravision MBX1200Z w/20Mhz&8MB | 429 |
| Paravision 8-Up! w/0MB | (2000) 99 |
| Paravision 8-Up! w/2MB | (2000) 149 |
| Paravision 8-Up! w/4MB | (2000) 229 |
| Paravision 8-Up! w/6MB | (2000) 309 |
| Paravision 8-Up! w/8MB | (2000) 389 |
| DKB 2632 w/4MB | (Requires2630) 399 |
| DKB 1202 FPU & 1MB Ram | (1200) 159 |
| DKB 3128 w/4MB | (3000/4000) 395 |
| Exp. Sys. Dataflyer Int. w/2MB Exp to 8MB | 199 |
| Supra External w/2MB (500) | (500) 199 |
| CBM 2052 w/2MB | (2000) 99 |
| CBM 2058 w/2MB Exp to 8MB | (2000) 175 |
| CBM 501c Clone w/512K | (500) 49 |
| Exp. Systems 601c w/1MB | (600) 69 |
| DKB Megachip 2000/500 w/2MB Agnus | 249 |

CSA 12 Gauge Accelerators

| | |
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| 33Mhz w/MMU & SCSI Board | 399 |
| w/4MB 80-70NS Ram | 549 |
| 33Mhz w/MMU & FPU & SCSI | 499 |
| w/4MB 80-70NS Ram | 649 |
| 50Mhz w/MMU & SCSI Board | 499 |
| w/4MB 60NS Ram | 675 |
| 50Mhz w/MMU & FPU & SCSI | 599 |
| w/4MB 60NS Ram | 775 |

Amiga 2000 Accelerators

GVP 68040 @ 33mhz w/MMU, FPU SCSI Controller with Extra Serial, Parallel Ports & 4 MB Ram 60ns Expandable to 64MB ram using 16MB simms (799 each) 1395

CSA 68040 @ 33mhz w/MMU, FPU SCSI II controller card w/0MB. Uses 72 pin 60ns industry standard simms and is expandable to 64 mb using 16mb simm modules. 995

GVP 68030 @ 40mhz w/FPU & SCSI Controller & 4MB ram at 60ns expandable to 16MB ram 795

DKB

Megachip 199

Allows your A500 & A2000 series computers to have two megabytes of chip ram. A must have for people who use video, graphics and audio applications. Included is the Megachip daughterboard with 2MB Agnus chips with an extra one megabyte of ram. (Requires A500 to have A501 ram expander +49.95)

A1202 board (A1200 Only) 99.95

A multi-function board for the A1200 Computer that provides the maximum fast ram expansion plus a battery backed up clock-calendar. Includes two simm sockets for combinations of 1, 2, 4, 5, or 8MB of fast ram using industry standard 32 bit simms with 72 pins. Optional pldc math co processor can speed up math functions as much as 1000% or more.

A3128 Ram board (A3000/4000 Only) 249

Allows 32 bit ram expansion to 146 megabytes of ram using 72pin industry standard simms. Four simm slots accept either 4, 8, 16, or 32 megabyte simms.

A2632 Ram board (A2630) 399 w/4mb

Allows 32 Bit ram expansion onboard of 112mb of ram using industry standard 72pin simms. Has four sockets allowing use of 4, 8, 16, or 32 mb simms. Allows full burst mode support.

Kwikstart II (A1000) 54.95

A1000 owners can now add kickstart roms to their machines with this device! Supports two different revision roms & allows access to more system ram

Multistart II 6a (A500, 600, 2000) 29.95

You can use more than one kickstart rom chip with this device! Switchable by resetting the machine for a few seconds.

Cobra 28 mhz & 40ec mhz 159/249

Accelerator for the A1200 computer system that allows you to speed your machine up to 600% faster. Includes capability to add 128MB of fast ram using industry standard 72 pin simms & battery backed clock-calendar. Optional FPU can be added. Optional SCSI I & II Controller can be added +89.00

Mongoose (A1200) 68030 50MHZ 275.00

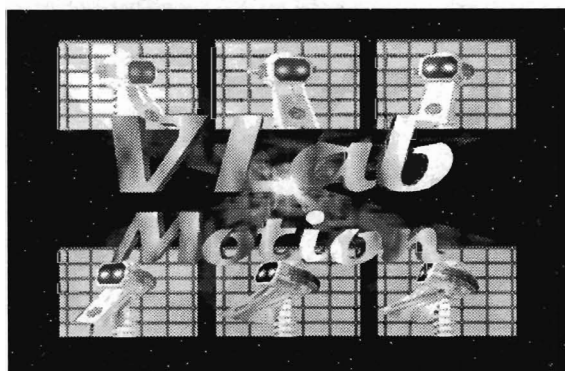
Accelerator for A1200 computer with 68030@50mhz Expandable to 128MB of fast ram using industry standard 72 pin simms. Increase in speed up to 800% & has battery backed clock-calendar. Optional FPU or SCSI I & II Controller can be added +89.00

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Here's what you've been waiting for. Now you can bring the power and versatility of true on-line video and audio non-linear recording, editing, and playback to your Amiga. The VLab Motion System is built around a Zorro II card that utilizes a compression / decompression JPEG chipset and other specialized chips to provide real time digital video capture and playback at YUV 4:2:2 square pixel quality, real-time effects like chroma keying, genlocking, picture - in - picture, and video scaling. The VLab Motion is also perfect for computer animation playback from any animation package. Complete AR-exx support allows special effects and digital video effects to be applied to your video frames with third

party image processors like ADPro™ and Image FX™. Included in the system is the Toccata 16 to bring simultaneous 16-bit audio into the production. Full compatibility with Retina Z2 and Z3 display enhancers allows users to add a high resolution, 24 bit interface to VLab Motion System's powerful MovieShop software. No time base corrector, time code, or dedicated hard drives are required. VLab Motion includes composite and Y/C input and output with an expansion socket for digital YUV or RGB component transcoders. The VLab Motion System also provides an additional adapter for direct interfacing with the Video Toaster™. The VLab Motion System is perfect for video editing, computer animation sequencing and playback, and real time video grabbing for multimedia applications (such as Cd-Rom games and MPEG movies). Add the VLab Motion System to your video or graphics studio and you will fly above the rest. Call for complete brochure.

Vlab Motion Features:



- * Digital video capture at 60 fields or 30 frames per second
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- * Simultaneous non-linear audio w/Toccata 16
- * YUV 4:2:2 square pixel quality
- * Hardware real-time scaling, chroma keying, genlock, pict-in-pict
- * Works on A2000/A3000/A4000
- * Compression/decompression JPEG chipset: 29.5 MHz peak frequency
- * Composite and Y/C input and output
- * Expansion socket for digital YUV or RGB component transcoder
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**EXPANSION
SYSTEMS**

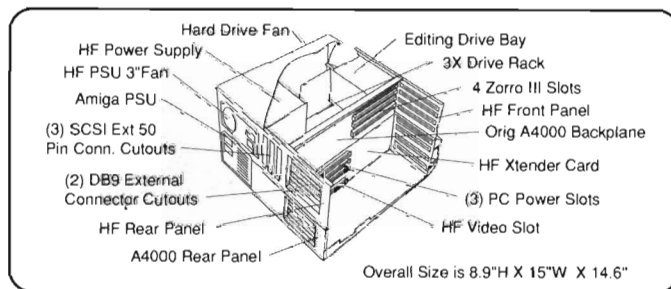
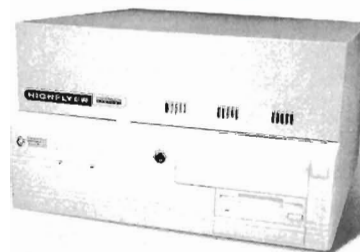
Amiga 4000 Integrated Expansion Chassis

The HIGHFLYER expansion chassis is designed for the Toaster 4000 user that would like to use all four Zorro III and three powered PC slots when the Newtek Toaster is installed. The HIGHFLYER is especially useful when used with the Toaster Flyer non-linear editing system. In addition to the extra slots it also provides an extra venting fan and room for the video A and B 3.5 X 1.7 inch editing drives. The Audio drive is placed in the A4000 bay. The HIGHFLYER installs in just minutes using just a screwdriver and maintains the same footprint, keeping all signal lines as short as possible and inside the confines of the chassis.

Features:

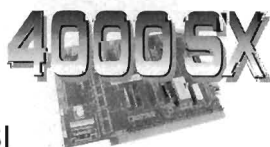
- Four Zorro III Slots with Toaster
- Three PC Power Slots
- Six Additional 3.5" Drive Bays
- Three Drive Activity LEDs
- Additional 250 Watts of Power
- 3 External 50 Pin SCSI Ports
- 2 External DB9 Ports
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- Increased Cooling Capacity

HighFlyer PS (with power supply) ~~\$395.00~~
 HighFlyer (no power supply) ~~\$345.00~~
 Fan Kit (increased cooling) ~~\$35.00~~
 Cable Kit (for Newtek Flyer) ~~\$65.00~~
 Drive Rack (extra 3 drives 1" high) ~~CALL~~



DATAFLYER

Amiga 4000 SCSI CONTROLLER



Attach External or Internal SCSI Drives, CD ROMs, SyQuest and run AmaxII

The DataFlyer 4000SX is a SCSI 16 bit controller expansion card that offers great performance at a cost attractive to the price conscious customer. It is the ideal SCSI companion to the internal IDE hard drive in the Amiga 4000.

The DataFlyer 4000SX allows the user to attach SCSI devices while still running the internal IDE hard drive that came with the Amiga 4000. The DataFlyer manual specifically addresses the information required to format and use the different SCSI devices. Each device is unique and requires specific drivers and/or programs to be run in the background and the DataFlyer 4000SX makes it easy.

The DataFlyer 4000SX also comes with the right combination of cables and hardware to fit the needs of the A4000. DataFlyer 4000SX-25 model has an additional DB25 cable and bracket to attach external SCSI devices. Installation software so advanced... It's simple. The DataFlyer AutoInstall program is the finest and easiest to use of any installation program available for any Amiga computer.

DataFlyer 4000SX ~~\$90.00~~
 DataFlyer 4000SX-25 ~~\$100.00~~

DATAFLYER

Use SCSI Devices
Plus Internal IDE Drive
Without using the Expansion Slot



A4000: Does not use 100 pin Zorro slot.

A1200: Leaves CPU slot open for memory or accelerators.

The DataFlyer SCSI+ is a 16 bit controller card that converts the signals on the IDE/AT hard drive header to also run SCSI devices at the same time. It comes in versions for your A4000 desktop and your A1200. Operate up to 5 devices like SCSI drives, CD ROMs, SyQuest removable drives and the original IDE/AT drive at the same time. The DataFlyer SCSI+ will automount from the existing IDE/AT hard drive or from the booting Workbench disk. The DataFlyer SCSI+ easily installs directly onto the A1200 IDE header (no need to remove the shield) and provides an external DB25 connector that mounts on the rear panel. The A4000 version mounts onto the back panel providing an external DB25 connector and internal 50 pin SCSI header. It does not use a Zorro slot! The DataFlyer SCSI+ comes with easy to use formatting software and all cables and hardware.

DataFlyer SCSI+ 1200 ~~\$99.00~~
 DataFlyer SCSI+ 4000 ~~\$119.00~~

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- OPTICAL IMAGE STABILIZATION
- HI RES COLOR VIEW FINDER
- RC TIME CODE
- LOW LUX
- LIGHT WEIGHT



JVC GYX-2B 3-CCD S-VHS CAMCORDER

- 3 HALF INCH CCD- 750 LINES OF HORIZONTAL RESOLUTION
- LOW LUX MODE- SHOOT W/ ALMOST NO LIGHT
- VARIABLE SCAN- SHOOT FLICKER FREE
- QUICK RECORD MODE-
- SETS TO AUTO IRIS W/ AUTO LEVEL CONTROL
- FULL TIME AUTO WHITE CIRCUIT
- GEN LOCK INPUT- SYNC W/ OTHER CAMS
- DUAL OUTPUT SYSTEM- OUTPUT TO EXTERNAL RECORDER



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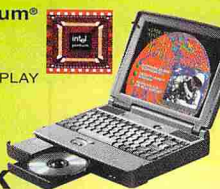
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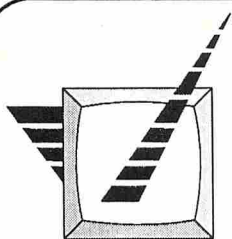
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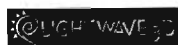


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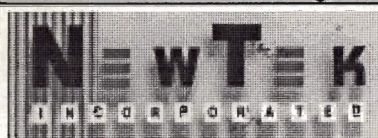
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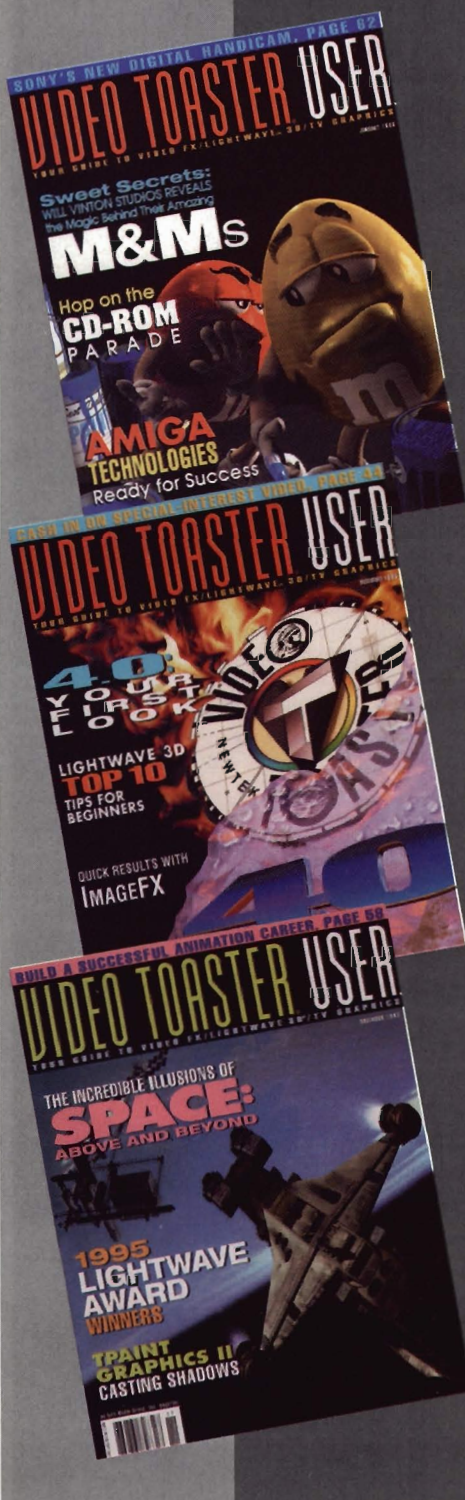
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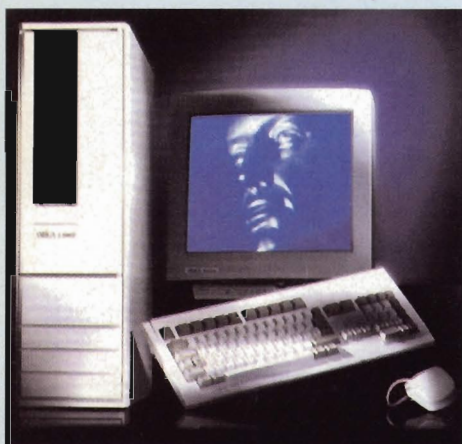
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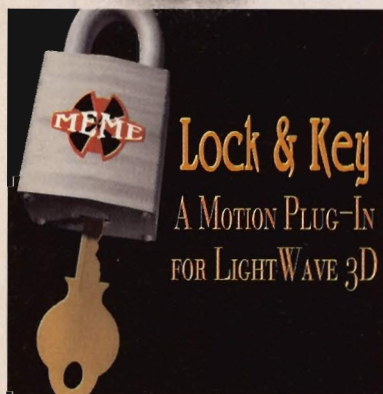
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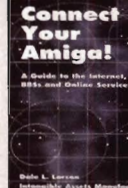
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- Batch Render through LightWave
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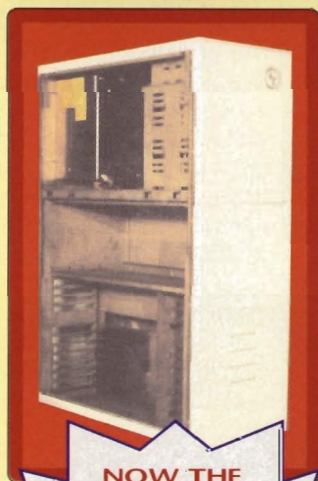
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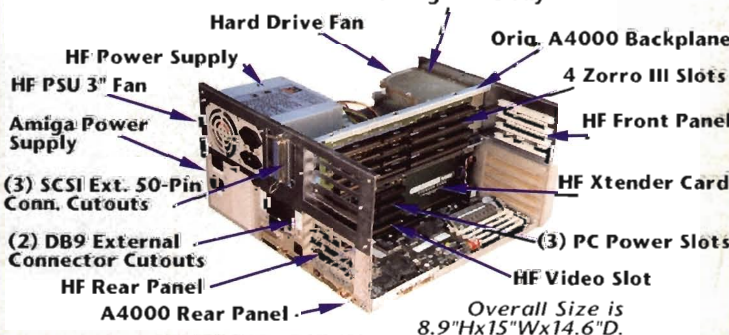
HIGHFLYER

EXPANSION SYSTEMS

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LAST WORD

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Demo Reel Secrets, Part II



A few months ago, I wondered aloud why we got so many crappy demo reels at Foundation Imaging. I bitched and complained and was openly hostile toward a good many aspiring animators for "sharing" with us. "OK, big shot," I was told. "Why don't you stop griping and tell us what qualifies as a good demo reel out there in Tinseltown!" Well, here goes...

Content

Of course, the most important aspect of your reel is the images it contains. Furthermore, let me make it clear that when I say images, I mean *lots* of images. Hundreds, maybe even thousands, of frames of your lovely animations. We've gotten a few reels with nothing but stills on them—something that tends to convey minimal animation skills. If you're looking to become a 2D artist, stills are fine. But for a LightWave animator? Sorry, no dice. Even if you just want to demonstrate modeling ability, it's nice to see a model in action. Rarely do you see a shot on *Babylon 5* that consists of a spaceship rotating in front of the camera for 60 seconds accompanied by some light jazz music. It just doesn't happen. If you want to show a few stills of "work in progress" following some keen animation, that's different. But stills only? Don't bother.

Another common faux pas is aspiring employees' tendency to put everything they've ever done on their demo reel. We received one video that began with an impressive "hire me now" sequence, only to end with clay animation probably done in the third grade! I think people do this because they want to pack a tape with as much as they can, but trust me—less is more. You are infinitely better off with a spectacular one-minute reel than a so-so five-minute reel featuring one minute of quality. Substandard work can really hurt your chances! Especially since you're most likely to lead off with the good stuff and save the rest for later, which is what the viewer will see last and remember most. In the end, the old adage about length not being important is a good lesson to adhere to. So make sure that everything on your reel represents the absolute best that you are capable of right now, even if it means sending out a 30-second tape.

Oh, and an important reminder: the *VTU Star Wars* Contest is over! That means you can stop sending in tapes with TIE Fighters and X-Wings on them. For that matter, try to avoid using the *Enterprise*, Klingons, Starfuries or PhoneBook objects in a starring role. In other words, be original! We know what the *Enterprise* looks like, so unless your reel contains one that looks better than the ship on TV, forget it. Don't shoot yourself

in the foot by showing us an inferior copy of something we're so familiar with! Come up with your own designs. You'll seem more professional right from the first frame.

Presentation

In Hollywood, packaging is often more important than content. Remember, this is the movie business, so the people watching your demo reel will be expecting something cinematic. Music, sound effects and good editing are major pluses. Use a couple of fancy Toaster wipes and edit your best shots into a fast-moving compilation set to some good, foot-stomping tunes. Better yet, tell a story! Go beyond the realm of a random collection of shots set to techno and make a little mini-movie! If you've got the skill to rotate an object in front of the camera, you can do something that will really knock a producer's socks off.

"Oh, but Mojo," you say. "All I've got to show is a really cool spaceship I made. What can I possibly do with that?!" I'll tell you, bucko, you can make an entire epic based around that critter! Asteroids are easy to build, right? So throw a few together and have your ship bob and weave precariously through an asteroid field. Then, for the thrilling conclusion, have it head toward a planet (also easy to make), fly down to the jungle-covered surface, disappear into green fog and smack right into a tree! (Use the PhoneBook tree and map a scanned picture of a jungle onto a polygon.) Wow! A dazzling roller-coaster ride of a movie, topped off with a hysterical ending. It will make millions! More importantly, it will show people that you're creative and can do more than just model a good spaceship.

Though a demo reel like this is ideal, we've received very, very few that show even this much pizzazz. Sure, it would mean shelling out some dough, but don't forget that you're trying to get a job with this thing! A job that will pay you hundreds, even thousands of dollars a year, so don't skimp on your calling card. Spend the money to have it done right! People or studios with equipment you need may be willing to give you a break if they know you're making your demo reel, so mention it.

In the end, always remember that nothing is more important than your demo reel. I don't care where you've worked before or what school you went to or if Steven Spielberg is your uncle. The proof is in the pudding, and if you want to get anywhere in this business, that tape of yours better taste damn good.

Mojo thinks he knows everything just because he's a senior animator at Foundation Imaging. Tell him how he's got it all wrong by e-mailing him at mojo@val.net.



by Mojo

CD Problems? Meet the solutions:

AsimCDFS v 3.0

The AsimCDFS CD-ROM control package, which consists of AsimCDFS, AsimTunes, CDTV and CD³² emulation modules, FishMarket CD-ROM disc and a Preferences editor, allows the user to access CD-ROM discs with an Amiga computer and a supported CD-ROM drive.

AsimTunes provides advanced playback control over standard audio compact discs. Librarian features, such as track/disc naming and disc identification are also provided.

Direct reading of 16-bit audio samples from standard audio CDs is possible with AsimCDFS!

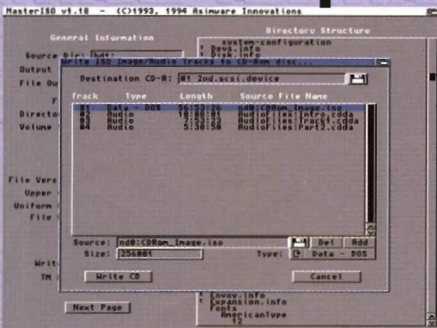
Full support for Kodak and Corel PhotoCD discs is integrated into AsimCDFS, including colour Workbench icons, transparent conversion to 24-bit IFF and support for resolutions up to 3072 x 2048.

AsimCDFS is able to read ISO-9660, HighSierra, Rock Ridge and Macintosh formatted discs.



CD-ROM READING

MasterISO



The MasterISO software allows a user to control a CD-R writer to create custom CD-ROM and CD-Audio compact discs.

CD-ROM discs are formatted in the universal ISO 9660 format, compatible with Amiga, IBM, Macintosh and virtually any other CD-ROM equipped platform.

CD-Audio discs are formatted to the Red Book standard and offer universal compatibility with standard CD players.

MasterISO currently supports Yamaha, Sony, Philips and Pinnacle CD-R writers.

Each CD-R disc has a capacity of 650MB; over 14 times greater than a standard 44MB SyQuest cartridge.

With CD-R media costs currently less than 1¢/MB, a CD-R writer may be the solution to your Toaster and Flyer storage problems!

CD-R WRITING

PhotoCD Manager

Tired of struggling with complicated IFF viewers, PhotoCD converters and screen mode conflicts? End your hassles with PhotoCD Manager; a point and click solution to PhotoCD images.

It is easy to pick the pictures you want to see with the full-colour thumbnail images displayed in 4096 or 256 000 brilliant colours (HAM or HAM-8).

Interested in viewing a single picture? Simply click and watch. Or, click on multiple pictures to define your own personal slide show. PhotoCD Manager will display only the pictures you want, in the order you want.

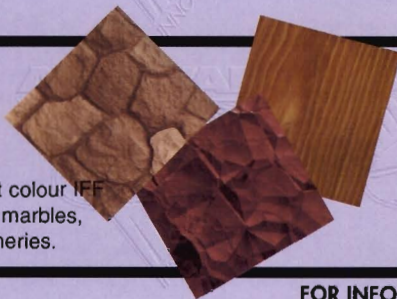
PhotoCD Manager works with any Amiga equipped with a CD-ROM drive or a CD³².



PhotoCD Viewing & Slide Show

Texture Heaven

Texture Heaven is a CD-ROM disc filled with 24-bit colour IFF textures and images. Included are 245 woods, 53 marbles, 59 abstract designs, 8 tiles and 18 wilderness sceneries.



Texture Heaven 2

Texture Heaven 2 is our latest CD-ROM texture disc. On this disc, you will find 164 abstract and computer-generated full colour textures. Images are stored in multiple formats.

FOR INFORMATION CIRCLE 126



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TM

T A P E L E S S

EDITOR

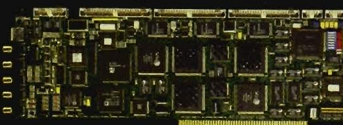
The next big leap forward in video production technology, a non-linear editing system for everyone. Not only is the Flyer the easiest-to-use non-linear editor, but it also has the same capabilities and quality you expect from a production suite with \$50,000 video tape decks.

Not JPEG. Not MPEG. The Flyer utilizes a breakthrough technology called VTASC, which was designed from the ground up to put broadcast quality video onto a hard drive.

The Flyer is a powerful tapeless editing system. Record video and audio segments as clips, which you arrange using a simple drag and drop interface. Using the Video Toaster System 4.0 software, add real-time video effects, graphics or text. Press the play button and your video plays back, real-time in broadcast quality. You can even use the Flyer as an animation recorder with LightWave 3D.

Of course, great video requires great audio. A powerful DSP chip provides up to eight tracks of 16-bit, CD quality audio for music, sound effects and voice overs.

"The technology of the Flyer will fundamentally change our lives. Now, making changes in your videos is interactive. The results you get are something so much better than anything you could have imagined." Brad Carvey, Free Range Digital Imaging, Inc., Albuquerque, NM.



Your Flyer card is the heart of the new Video Toaster. With your Flyer installed in the Video Toaster Bay™, it becomes the new Video Toaster system. Now, you have a portable field recorder. Plug your camera into the Toaster and record direct to hard drive.

Your new Toaster system also has built-in time base correction with proc amp controls, three digital still stores, a four input production switcher, video processor, luminance keyer, SMPTE time code reader/generator and a single frame animation recorder.

The Flyer installed in the Toaster Bay gives you the added flexibility of running it with your Amiga/Toaster system or any PC running Windows 95 or Windows NT. Everything you love about your Video Toaster Flyer and the freedom to use it anywhere.

"With the Flyer it is phenomenal how fast and easily you can create A/B roll edits. I can put together 5 shots with dissolves in 5 minutes, before the Flyer, that same job would have taken an hour." Rex Olson, Rave Video Productions, Burbank, CA.

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Flyer Requires: Amiga 2000 or 4000, Video Toaster Card and Video Toaster System 4.0 software with 9MB of RAM minimum, 100MB free on hard drive. Single SCSI II drive required for LightWave recording. For A/B roll editing two SCSI II drives and one SCSI drive is required. Input from video tapes must be time base corrected. Consult your dealer to configure a system suited to your needs. Some features require an Amiga with the AGA chip set. Specifications subject to change without notice. Amiga is a trademark of Commodore, Inc. Windows 95 and Windows NT are trademarks of Microsoft Corp. Video Toaster, LightWave 3D, Video Toaster Flyer, Video Toaster Bay, ToasterPaint, ToasterCG and Toaster are trademarks of NewTek, Inc. Design FryeAllen, Inc. © NewTek, Inc. 1995.